Industrial FINISHING

TO AMERICANS THE MONTH OF JULY IS ASSOCIATED WITH INDEPENDENCE AND FREEDOM

To finish users the Lilly Key can also be associated with freedom . . . freedom from finishing troubles and worries. Assert your independence by using Lilly's Dependable Finishes.

THE Lilly FINISHES VARNISH COMPANY

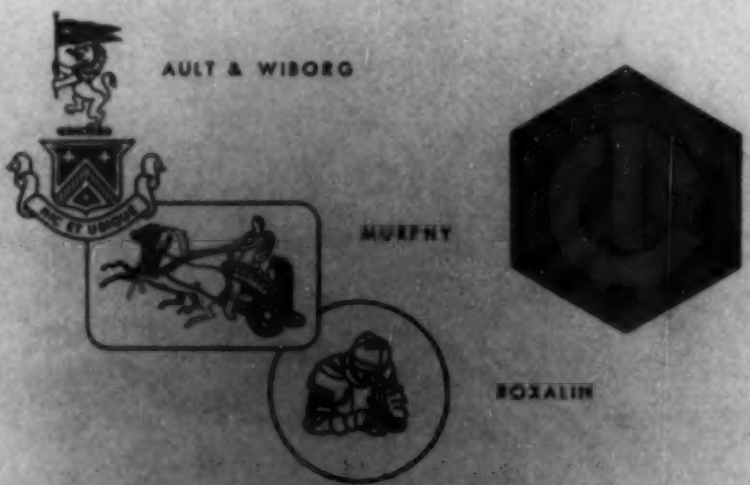
Indianapolis, Indiana • Gardner, Mass.

THE LILLY COMPANY • High Point, N. C.

Interchemical *Finishes*

UNDERCOATS, VARNISHES, LACQUERS,
ENAMELS for METAL, PLASTIC, WOOD

To give your product a good start, give it an Interchemical Finish!



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SYSTEM

55% savings in production cost, at Automotive Stamping and Manufacturing Co. of Detroit, is typical of the advantages of a combined Infra-red degreasing and paint baking system. Here, the product moves on a conveyor through degreasing oven (3 minutes), on to paint dip tank, and then through baking oven (5 minutes). One man handles both placing and removing product on conveyor. For faster, better, lower cost production, Infra-red Evenray Systems provide astonishing utility and efficiency. Information on the experience of many plants is available for your consideration.

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FOSTORIA, OHIO

Oldest and Largest Manufacturers of Industrial Infra-red Ovens

FOR BAKING • DRYING • PREHEATING • DEHYDRATING

Trade Mark Reg. U. S. Pat. Off

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Technical information and literature available on request. WRITE NOW. Learn how EVENRAY can aid your production.

CHOICE OF FINISHES FOR THIS VICTORIAN DINING SET

The Cherry cabinet and extension table by Superior Furniture Co. and the matching Birch Chairs by Charlotte Chair Co. combine in this charming Victorian Dinner Set. In our modern studios we combine experience and research to create both the mahogany and the antique Cherry finishes that are used on these pieces to produce rich, long-lasting appeal. Again, cooperation with manufacturer resulted in finishes that are profitable as well as practical.

For further information regarding our studio facilities and services, please write to

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
Makers of the Famous Guardsman Finish and Guardsman Cleaning Polish

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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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JULY, 1950
Vol. XXVI, No. 9

ABC

Distributed monthly to finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

★

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Acceptance under Section 34.64, P. L. & R., authorized

26 TWENTY-SIXTH YEAR OF PUBLICATION

Beautyware Caravan. Seven large "mobile showroom" trailers each containing Briggs Beautyware plumbing fixtures were launched recently on their nationwide caravan trek. Each trailer contains two complete showrooms stressing colored pumbing fixtures made by the Briggs Mfg. Co., Plumbing Ware Division, Detroit, Mich. The forward portion of each trailer is centered around Briggs Beautyware in beautiful "Sea Green" while the rear portion is furnished with "Sky Blue" fixtures in a setting of blending colors.

The show rooms on wheels round out one of the most elaborate and most extensive sales promotion campaigns yet undertaken by a plumbing manufacturer. Trained men have been selected to guide each trailer on a planned schedule in order to service the wholesale distributors from coast to coast as well as architects, builders and housing authorities.

* * *

Heavy Ink Marking. Mar-Kit is a disposable marking unit for use in shipping rooms, sign shops, mail rooms and other offices and plants where there are frequent uses for black heavy lettering. A complete felt-point pen is attached to the screw-cap bottle cover. When the ink supply is exhausted the empty bottle is discarded and a fresh bottle of ink is attached right onto the old writing assembly.

The ink is a specially compounded formula that writes dry, does not become sticky in the bottle and is ready for instant use at all times. The device is made and sold by B & L Mfg. Co., 3512 N. Halsted St., Chicago.

* * *

Paper Towels. Your paper towels are "thirstier" now than they used to be. To increase the absorbency of paper toweling and tissues, manufacturers are adding to them tiny amounts of odorless and harmless chemicals known as rewetting agents.

Monsanto Chemical Company, of St. Louis, has reported that after considerable laboratory work, one of its products was found to be superior for this purpose. The product, Sterox CD, has been tested and proven on plant scale operations.

Paul Logue, development director for Monsanto Chemical Co.'s Phosphate Division, said that rewetting agents are now being used primarily in industrial toweling. Their use in household toweling and tissues will increase, he believes.

"Industrial toweling," Mr. Logue said, "has had to be strengthened with certain materials which reduce its absorbency. Sterox CD restores it." Even soft household toweling and tissues, he said, lose some of their absorbency with age. Rewetting agents may be used to prevent this loss or further improve their moisture pickup.

* * *

American Walnut. "Figures of Fashion in American Walnut," the initial issue of a new bi-monthly series

(Continued on page 7)

MORE AND MORE PEOPLE

are switching to

STAINFILL

It's a perfect stain and filler applied as a single coat!

STAINFILL ***really*** fills the pores, and POSITIVELY does ***not*** shrink after rubbing.

STAINFILL produces beautiful clear, clean light-fast colors which eliminate greying or dulling.

Now available in four attractive, nationally accepted colors:

No. 1 . . . "New-Colonial" Mahogany
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No. 3 . . . "Light Moderne" Walnut
No. 4 . . . "DEEP-TONE" Walnut

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COLD STRIPPERS

Fast! Economical! Safe! New!

"UNISOL"—for removing all baked enamels! Used cold—Non-inflammable—Non toxic—Strips baked enamels in seconds—Used for all type metals—Requires no rinse—Non-injurious to hands or clothing.

"UNISOL No. 2"—A new cold stripper for japans and vinyls—Non-inflammable—Strips tough japans and vinyls in matter of minutes—Used for all type metals.

"STRIPPER 202"—Something new for removing "stop-off" lacquers in seconds—Will not tarnish highly polished metal surfaces—Non-inflammable—Used cold—Non toxic.

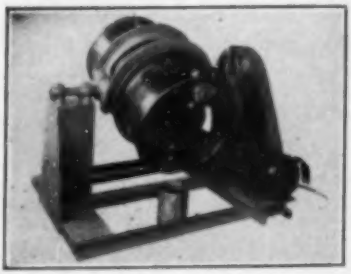
Samples and further information supplied on request.

CHEMCO PRODUCTS CO., Inc.

7740 WEST 47TH STREET LYONS, ILLINOIS

CHANGE DRUM TUMBLER

Mixes in Suppliers' Drums



AVOIDS:

The fire hazard of open drums
Contamination of one product with another
Cleaning of equipment between mixes
Residual sludge.

ASSURES:

Uniform mix
Easy inspection during operation
Withdrawals in any quantity needed

Portable ramps for fast insertion and removal of containers
Hand Control at motor to place drum in any position

THE VOL-U-METER Company, Buffalo 16, N. Y.

of portfolios, is now being extensively mailed from the Americal Walnut Manufacturers Association at 666 Lake Shore Drive, Chicago 11, Ill.

Highlighting the trend to the wider use of character marked woods, in both lumber and veneer construction, this portfolio of ideas will interest the thousands of furniture and musical instrument manufacturers and dealers, architects, and decorators, as well as all wood-working and designing craftsmen concerned with Walnut innovations.

* * *

Prevent Mildew. A chemical heretofore used to control the clothes moth has also been successfully employed to prevent mildewing of stored wool, cotton, leather and paper products.

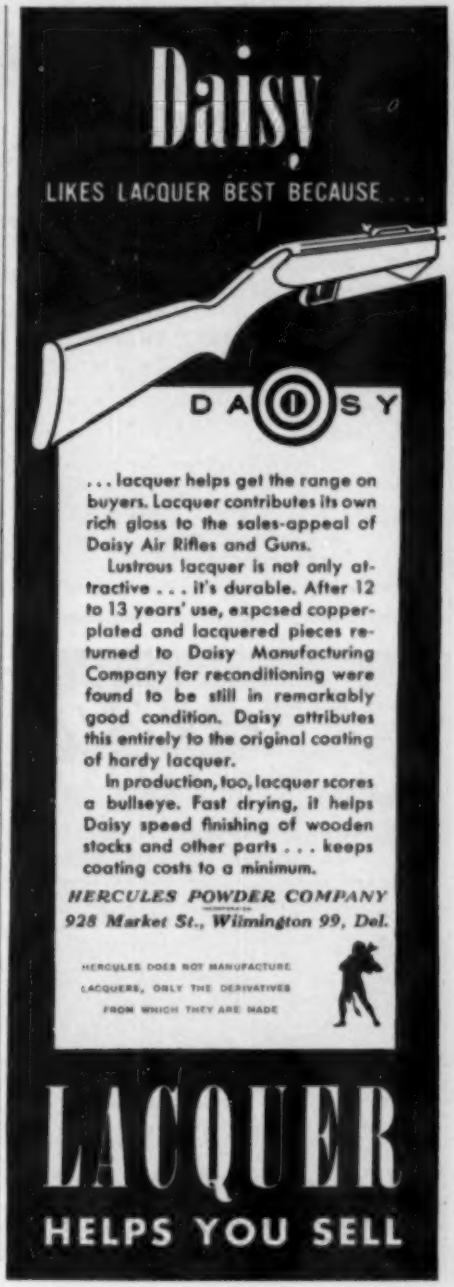
Laboratory tests by the Monsanto Chemical Co. have confirmed earlier indications that mildew, or mold growth, can be stopped by the proper use of Santochlor, the company's Paradichlorobenzene. Home studies have also demonstrated its effectiveness.

Roland S. Shumard, in charge of the company's industrial preservative group, declares that "Para vapors can do an effective job of preventing mildew growth but it is necessary that a saturated atmosphere be maintained in the storage compartment by replenishing the chemical as it is dissipated." Essentially, it is used in the same manner as in mothproofing.

* * *

Future Furniture. A look at the furniture of tomorrow was enjoyed by those who visited the Museum of Modern Art in New York, in an exhibit which closed July 16. Among the pieces shown were prize winning chairs and storage units in the International Low-Cost Furniture Design Competition.

Three molded shell chairs were much in evidence, one in metal, a plastic impregnated with glass fibers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LIKES LACQUER BEST BECAUSE . . .
DAISY
. . . lacquer helps get the range on buyers. Lacquer contributes its own rich gloss to the sales-appeal of Daisy Air Rifles and Guns.
Lustrous lacquer is not only attractive . . . it's durable. After 12 to 13 years' use, exposed copper-plated and lacquered pieces returned to Daisy Manufacturing Company for reconditioning were found to be still in remarkably good condition. Daisy attributes this entirely to the original coating of hardy lacquer.
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HERCULES POWDER COMPANY
928 Market St., Wilmington 99, Del.
HERCULES DOES NOT MANUFACTURE LACQUERS, ONLY THE DERIVATIVES FROM WHICH THEY ARE MADE
LACQUER
HELPS YOU SELL
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An economical white baking synthetic ideal for metal cabinets, etc. A one-coat job which requires no primer. Short-bake schedule. Porcelain-like toughness. Superior mar-resistance.

Write today for a sample or five gallons at the drum price.

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ELECTRO
COLD STRIPPER

- Cleanly and quickly removes all paints, enamels, synthetics or wrinkles. The finish literally "pops off."
- Permits refinishing in minutes—not hours. Especially effective on hard-to-remove baked-type finishes.
- Non-inflammable. Non-injurious.

Write for sample and quotations, or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.
2641 W. Grand Ave., Chicago 12.

and a molded plastic. There were many metal chairs with tightly stretched canvas to make the seat and back; also shown were combinations of plastic and wood and metal.

* * *

Gauge for Thin Films. A device has been perfected which is said to provide a highly accurate method of measuring attached dry films such as lacquer, enamel, etc., and thin sheets of metal, foils, paper and plastic.

Dry films are measured visually—by means of an optical attachment to the gauge, plus a suitable light source.

Thin sheets of material are measured by means of a feeler device.

* * *

Gas Sniffer. A gas detector has been perfected which continuously sniffs and analyzes the air in industrial plants for traces of harmful gases. The instrument has the Underwriters Laboratories approval. It is a product of Lor-Ann Instrument Corp., Jersey City, N. J.

* * *

Plywood from Italy. A light plywood made from Dolomite fir is being offered to American furniture manufacturers. It is called "panaforte", and comes from Riva, Italy.—*U. S. Plywood Corp.*

* * *

Finish for Vinyl Plastic. A new synthetic material is especially adapted for application on vinyl plastics; for instance, curtains, drapes and tablecloths made of vinyl plastic and silk screened with intricate designs and colors may be coated with this new synthetic without fear of puckering the surface.

* * *

A New Type Box Car is now ready for use. It is a 50-ft. all-steel car equipped with a damage-free loading device, high speed trucks and a shock

(Continued on page 122)

combines

EXPOSURE to the sun and the rain—to the abrasive qualities of soil and sand—to the friction and pounding vibration of the mechanism—that's what the finish on a combine takes daily.

A paint, to hold up under such punishment, must necessarily be a good one. Tousey has developed such a finish and it is being used successfully by leading farm equipment manufacturers.

If your paint problem is one where an exceedingly good exterior finish is needed, write Tousey today—our information will prove helpful.

"65 YEARS OF ACHIEVEMENT," our new book, tells the story behind Tousey's paints, lacquers and varnishes. You'll find it interesting reading. A postal card or letter will bring you a copy with no obligation.

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Mahon Finishing System specially engineered to meet the production requirements of Caterpillar Tractor Co., Peoria, Ill., manufacturers of Diesel Engines, Tractors, Motor Graders, and Earthmoving Equipment.

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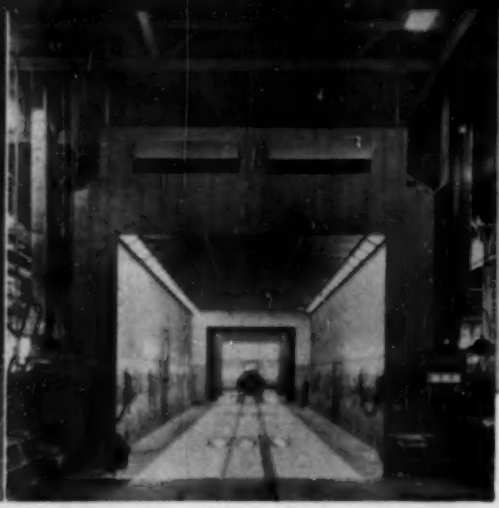
M

SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH



"Caterpillar" Diesel Tractors, Earthmoving and Road Building Equipment Painted in New Mahon Finishing System!

After purchasing several units of Mahon Finishing Equipment, which included Cleaning and Pickling Equipment, Spray Booths, and Drying and Baking Ovens, it was only natural that "Caterpillar" should turn to Mahon for a complete finishing system to handle painting of their Tractors, Motor Graders, and other units of heavy road building equipment on a straight line production basis. Mahon's solution to "Caterpillar's" requirements is illustrated above . . . it is a Complete Finishing System embodying a Cleaning Booth and a large Down-Draft, Tunnel-Type Spray Booth with an Integral Air Supply System which is controllable for volume and temperature. You, too, can reduce finishing costs with modern Mahon equipment planned and engineered to meet your specific requirements. If you are contemplating new finishing equipment, remember that the Mahon organization has pioneered development in this highly specialized field for over thirty years — and that Mahon engineers have, through constant research and experimentation, accumulated a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon's Insert in Sweet's Mech. Ind. File, or write for Catalog A-650.

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Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens; Core Ovens, Hydro-Foam Dust Collectors, Fog-Filters, and other Units of Special Equipment.

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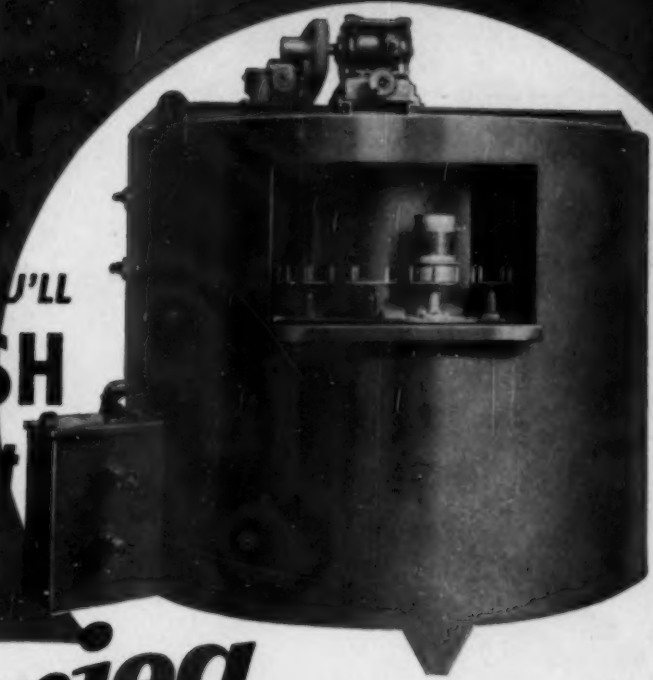

Schmieg CENTRI MERGE WASHERS

FIRST *Step* • FIRST *Choice* • *In* FINISHING

You start right when you call upon Schmieg engineers for mechanical washers to fit your specific production requirements. And that's why you finish right, too. Because Schmieg washers are designed and engineered to give you high production cleaning, long trouble-free performance at low operating cost.

There's a Schmieg washer for any kind of job, a washer that will save floor space and can probably be loaded and unloaded by one man. Available in manual and automatically loaded types.

Convenience is emphasized in Schmieg washers, no matter what type—convenient controls, variable speed drives, doors that permit quick access to interiors for ease of maintenance.

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Start right now by consulting Schmieg engineers for your washing requirements.

THE AIR PURGE in CENTRI MERGE

Schmieg INDUSTRIES INC.

Engineers & Manufacturers

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PIONEERS IN PROTECTION M&WCo 1876

. . . where industry goes with finishing problems

MAAS & WALDSTEIN COMPANY

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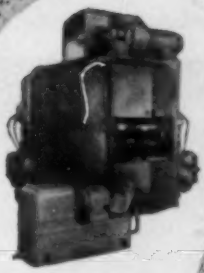
Pacific Coast Division: SMITH-DAVIS CO., 10751 Venice Boulevard, Los Angeles 34

MANUFACTURERS OF INDUSTRIAL FINISHES

Complete finishing Systems



A Continuous Process is no stronger than its Weakest Link . . . . . .

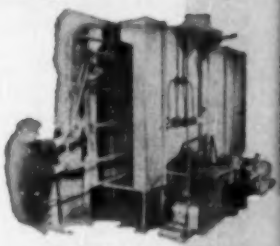
Every component **SPRAY BOOTH, FLO-COAT MACHINE, OVEN or WASHER**

receives the same careful attention . . . .

Only Thoroughly Tested features are incorporated in P-D equipment . . . . . .

We invite you to inspect our latest installations

Write, Wire or 'Phone



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"We are using Sherwin-Williams' lacquers exclusively on all our pianos and piano benches today because they meet our requirements fully. Our experience with them has been very good." O. S. Parrish, Vice-Pres. Jesse French & Sons Piano Division, H. & A. Selmer, Inc.

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Few types of furniture are required to meet as high standards of craftsmanship in finish as are pianos. Embodying finest traditions of pride in workmanship, they occupy the position of a showpiece in the home.

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Excellent build . . . outstanding clarity . . . exceptional resistance to cold-checking . . . make Sherwin-Williams' lacquers first choice for any type of furniture where beauty and durability of the finish are important. Investigate today. Write The Sherwin-Williams Co., Industrial Division, Cleveland 1, O. (Export Division, Newark, N.J.)

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INDUSTRIAL FINISHES

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- **OPEX LACQUERS**
- **KEM ARTMETAL (WRINKLE) FINISHES**

You'll find a quick, handy, moneysaving answer to an amazing variety of production and maintenance problems in this all-round, top-quality Industrial Enamel!

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Best answer
to your finishing problems

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DEVILBISS SPRAY GUNS . . .

Whether you spray lacquer, flock or adhesives . . . regardless of the shape or size of the product you're painting . . . there's *a DeVilbiss Spray Gun designed to give you finest quality finishes at low cost.*

There's the DeVilbiss MBC . . . acknowledged leader of all spray guns. No other is so widely used for so many purposes! And there are specialized DeVilbiss guns for specific jobs. Guns that handle every known type of finishing material. Suction and pressure feed guns. Guns for precise decorative work. Lightweight guns for women. Even automatic spray guns for mass production painting . . . Every one is factory-tested by experts, so it measures up to the high standard of DeVilbiss quality and efficiency. DeVilbiss Spray Guns are preferred by operators and top management alike.

So for the very best in spraying results depend on DeVilbiss. And for expert advice on all coating and finishing problems, depend on your DeVilbiss Engineer. You can consult him without obligation, of course.

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SPRAY EQUIPMENT
EXHAUST SYSTEMS
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NATIONAL'S "Mity-Midget"

FOR WORK OF ANY SIZE

Whether removing burrs on huge castings or putting a fine finish on relatively small surfaces, National's "Model 400" will do the job better and faster. Has a 3/16" orbital stroke . . . operates at 5000 to 6000 rpm . . . weighs only 4 lbs. . . . costs $79.50. Reliable . . . powerful . . . will not stall. Write for full details today or see your dealer.

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NACROMER is an excellent substitute for Pearl Essence where cost is a factor and where the high brilliance of natural pearl is not necessary.

It is—

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NOW!

Enamels approach

Thanks to

Made with CYCOPOL resins, here's what these new-type enamels will do:

Dry Faster... just look at these drying schedules. Remarkable for *enamels!*

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Dust Free ..... 5-10 minutes
Tack Free ..... 15-20 minutes
Dry Hard ..... 1-2 hours

BAKE ..... 5-10 minutes at 300° F.
10 minutes at 250° F.
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Save Money... cut down air-drying or baking time. Possibly eliminate need for baking entirely (like one small manufacturer who found he could save $500 per month by switching to a fast air-dry finish).

Eliminate Carton-Stick... costly pre-packing delays pared to the minimum; and product appearance maintained.

*Trademark

Lacquer in Speed of Dry!

The new Cycopol* Resins!

But that's not all!

Ask your regular finish supplier to *show* you the high gloss, excellent adhesion, good color retention and general all 'round toughness and durability of these finishes.

Here's where Cycopol Resins shine:

Drum Enamels	Paper Coatings
Venetian-Blind Coatings	Farm Implement Finishes
Hammer Finishes	Engine Enamels
Floor Sealers	Collapsible-Tube Finishes
Washing Machine Enamels	Clear Wood Finishes
Garden Equipment Finishes	Dip-Tank Finishes
Can Coatings	Filing Cabinet Finishes
Tin Decorating Finishes	Wipe-on Furniture Polishes

This is only part of the fast growing list of uses. Should you be on it? Ask your finish supplier, NOW!

Cyanamid make finishes? NO...

that's where your regular finish supplier excels! *We* make only the resins . . . *he* knows how to transform them into *your* kind of finish. So see him today . . . and if by chance he hasn't yet worked with the CYCOPOL Resins, we'll be happy to send him complete data.

AMERICAN Cyanamid COMPANY

COATING RESINS DEPARTMENT

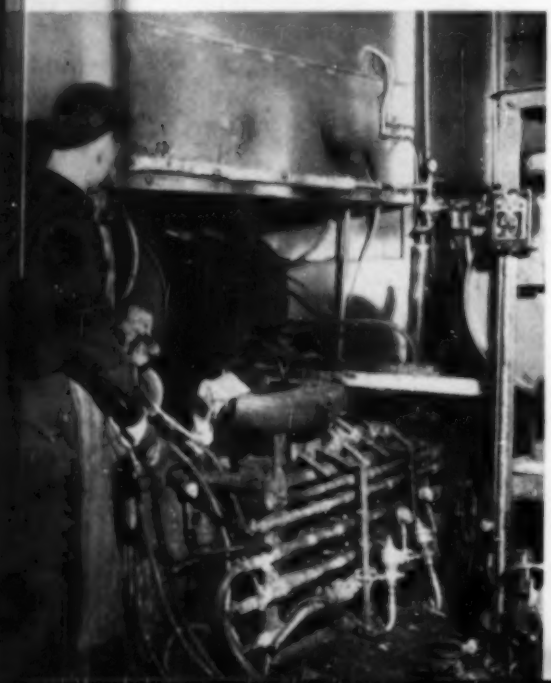
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Production Painting

OUR FINISHING SYSTEM as well as our equipment is designed for extreme flexibility to meet customers' specifications and to maintain the highest quality in painting steel barrels. These barrels are used as containers for food fats, oils, solvents, lacquers, enamels, and chemicals, both dry and liquid. The inside and sometimes the outside coating material must be resistant to the contents of the barrel.

Many customers consider the exterior appearance of their barrels highly important as an advertising medium and they specify the type of material, color and film thickness for the paint job. Others are satisfied with just a plain black baked finish. As a result our painting equipment and methods must be flexible to give all of our customers exactly what they want. We must produce a quality paint job rapidly and economically.

Clean dry steel barrels move into this spray booth wherein they are rotated and spray-painted automatically—in any color.



All Equipment is Timed And Synchronized

Before going into a detailed description of each operation, let me give you a quick overall picture of the equipment. First comes the metal washer through which barrels are conveyed in horizontal position. This is connected to the spray booth (automatic and hand spraying) by a cross-bar conveyor.

After leaving the spray booth, barrels pause at the inside-surface coating station, then pass up and through an oven. All along the way, from the washer to the oven, barrels pass from the cross-bar conveyor onto steel cone rollers or spinners where they are rotated for certain operations, after which they are mechanically picked up by the conveyor and moved to the next operation.

To make the entire system function successfully, correct timing and synchronization of all equipment is absolutely essential. Not only does this apply to the forward movement of the barrels on the conveyors and stopping them for rotating, but it applies also to the

# of Steel Drums . . .

operation of the fixed spray guns, and to both the operation and mechanical movement of the two spray guns that spray barrel heads.

Barrels Are Cleaned Inside and Outside

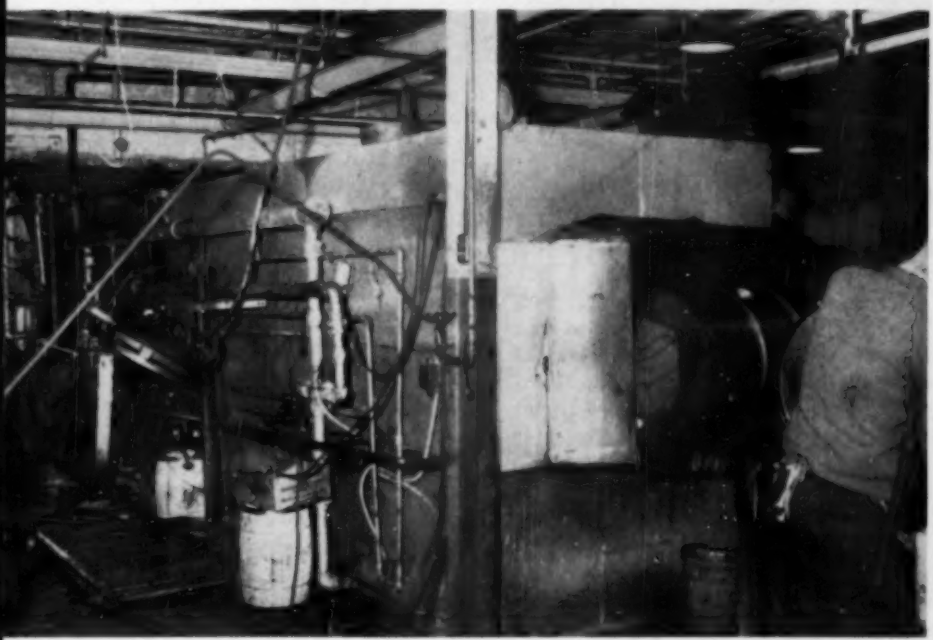
Before being painted, the steel barrels are put through a metal washer. Barrel heads go through separately. The inside surfaces of both the barrels and the heads are cleaned thoroughly. In the first stage of the washer, each barrel is stopped where four steel cone pulleys (two on each side) rotate it

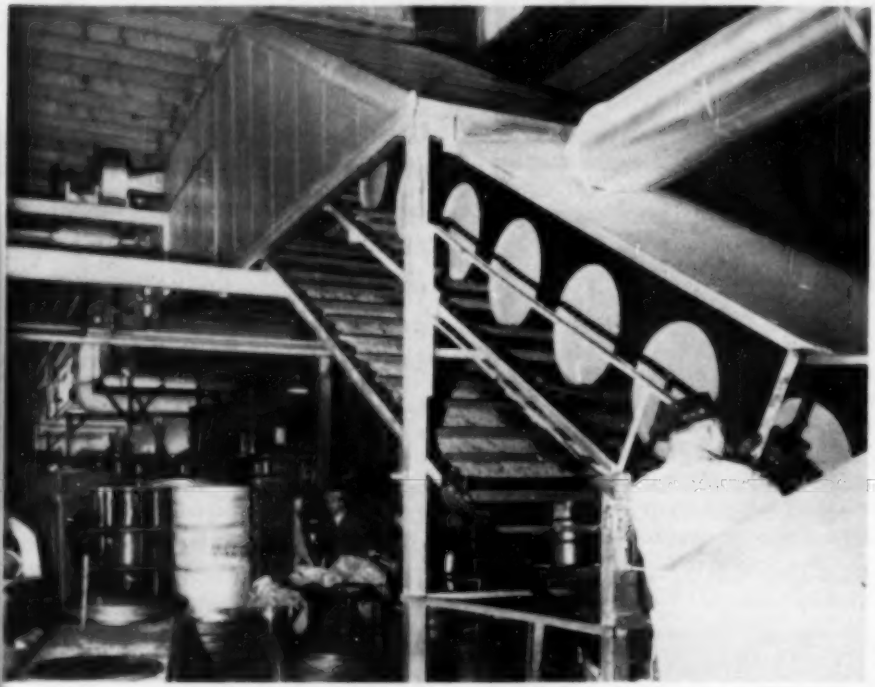
Cleaning and surface treatment, oven-drying, automatic spraying of heated synthetic enamel in one or several colors, the use of masks, interior coating, oven drying, screen stenciling — all this and also conveyorization.

By Seymour Schlein

Chief Engineer of Cleveland Steel Barrel Co.

Steel barrels entering metal washer where they are rotated as the hot cleaning and surface treating solutions spray over them at 90-lbs. pressure. Next comes the dry-off oven.





Inclined conveyor carrying painted barrels up to oven. Note exhaust pipe from first zone to remove fumes. Synchronization places barrels uniformly on this cross-bar conveyor.

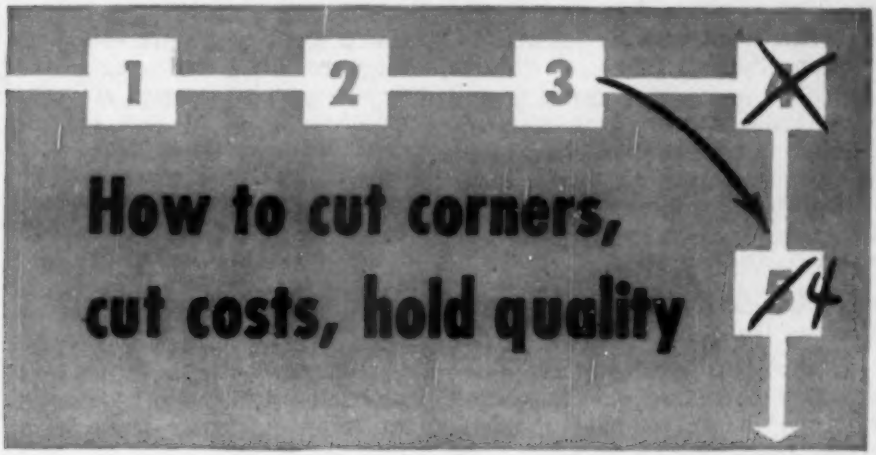
at 65-rpm. while a hot solution (140° F.) containing phosphoric acid is sprayed on from all sides at 90-lbs. pressure.

In the second stage the operation is repeated. Next follows a cold water rinse. In following stages water, with a slight amount of dichromate added, is sprayed on at 160° F. In each stage the barrels are rotated at the same speed and the same pressure is used for spraying.

Then the barrels and heads are returned to the fabricating department to be assembled and tested under water with air pressure for leaks. Next the assembled barrels go through the metal washer for identical operations, as just described, to clean their outside surfaces.

Dry-Off Oven, Followed By Cooling Period

From the cleaning machine, barrels go through a dry-off oven wherein they are subjected to temperatures of 300° to 450° F. to remove all traces of moisture, both inside and outside the barrel. The higher temperature is used on barrels having the largest area of drying surface. The gauge (thick-



OAKITE metal-cleaning procedures can make an entire production operation easier, cheaper, quicker. Three examples:

1. Pre-Paint Treatment Saves $800 Monthly That's what an electrical manufacturer credits to the OAKITE CrysCoat PROCESS, which cleans and phosphates simultaneously.

2. New Brass Cleaner Makes Big Savings A large plating job shop cleans brass with a new Oakite formula that minimizes tarnishing and rejects; cleans so well that, in many cases, a copper strike is dropped from the plating cycle.

3. Eliminates Pickle A maker of radio transmitters (using Oakite Compound No. 33 to remove rust and oil at same time) reports: "No longer necessary to pickle the steel."

FREE Write Oakite Products, Inc., 32F Thames St., New York 6, N. Y., for the new 44-page booklet *"Some good things to know about Metal Cleaning"*. Among the subjects are:

Machine cleaning	**Tank cleaning**	**Electrocleaning**
Pre-paint treatment	**Pickling**	**Paint stripping**
Steam-gun cleaning	**Burnishing**	**Rust prevention**

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

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ness) of metal used in barrel construction must also be taken into consideration.

Barrels cool as they travel to the spray booth. Cooling is accelerated through the use of ventilating fans. We aim to reduce the temperature of the metal to about 140° F. by the time each barrel enters the spray booth.

Spraying is Automatic, but Can be Done by Hand

In the spray booth, the conveyor transfers the barrel onto four steel cone-shaped rollers or spinners which rotate the barrel while it is being sprayed. Two spray guns, one at each side of the booth, coat the outsides of both heads. These guns are mounted on swinging arms which are connected to a control mechanism that causes each gun to automatically move from the outside perimeter of the head to the center. As travel starts, the gun is opened; movement is slow at first but it gradually picks up speed. When the arm reaches the center of the head the gun is automatically shut off and it remains closed while the arm returns to its original position.

Facilities for Spraying Barrels in Different Colors

Six fixed spray guns at the front of the booth are controlled by a mechanism whereby any one gun or a group of two, three, four or all six guns can be operated on four, six or eight second cycles. Between these spray guns and the revolving barrel are a series of metal shields or masks synchronized with the spray guns to be operated so that the shields rise to protect certain areas of the barrel from overspray while other areas are being coated. Of course, all spray guns are automatically cut off in back of each shield. In other words, paint overspray is prevented when a shield is raised into position to protect any barrel area. Upon completion of the cycle the barrel is automatically moved to the conveyor and the curing cycle is started.

Paint is sprayed at fairly low atomizing pressure and this pressure varies with the different guns that spray particular areas of the barrel and its ends.

After being painted on the outside the barrel is automatically picked up by the cross-bar conveyor. The length of time a barrel rotates in the spray booth and the operation of spray guns and shields or masks—all are mechanically controlled and synchronized with each other and with the conveyor speed.

In this spray booth it is possible to coat a steel barrel in one color, or a combination of any five different colors—all automatically. It is also possible to cut off the six automatic spray guns and hand spray the barrel, using the shields for multi-color coating if desired. Hand spraying is used only on short runs or for odd size barrels.

Insides of Barrels Painted Automatically

Those barrels that require an inside coating (the head and bottom are left off these barrels) proceed to a station where their forward movement is stopped. They are rotated while a spraying mechanism automatically extends into the bar-

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But "Know How" Too
When
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The Metal Phosphating Chemical
that Prepares Metal for Painting

SURPHOS

Is Easier to Use: dissolve in hot water to a concentration of one ounce per gallon and apply to metal by dipping or spraying. Acid proof equipment not needed.

SURPHOS CLEANS . . . FORMS PHOSPHATE COATING . . . PREVENTS RUSTING DURING STORAGE . . . IMPROVES ADHESION OF PAINT . . . INCREASES HUMIDITY and SALT SPRAY RESISTANCE of PAINT

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3778 BELLEVUE AVENUE DETROIT 7, MICH.

In Canada made and sold by Boyle Chemicals Ltd., Windsor, Ontario

Paint supply room where four shipping drums of paint (with heads removed) are capped with steel covers, each of which has an agitator for stirring paint inside the drum, a pump for pumping out paint, pressure gauges, fittings, and connections for connecting the contents of drums to copper paint lines leading to paint heater and on to spray booth.

rel to coat the inside surface with a specified film thickness; an even continuity is maintained in this operation. The action of this mechanism is controlled and contained with the cycle used in the spray booth and the conveyor speeds. The head and bottom are automatically coated in a separate booth as the head revolves on a turntable. The spray mechanism is designed to be in harmonic motion so that the complete surface being sprayed is given the same film thickness and continuity.

The entire system is synchronized from metal washer to the baking oven on definite time cycles, even down to the spacing of barrels on the cross-bar conveyor, to produce up to 500 barrels an hour.

Paint is Baked in Infra-red Gas Oven

A time lag of 1½ to 2 minutes occurs as barrels travel up an incline to the baking oven. Air is circulated rapidly in this zone to remove solvent fumes. The infra-red gas oven has five zones and in each zone the heat can be controlled within certain limits. Seventy-five percent of the oven air is recirculated and, of course, 25% of the air is fresh air—filtered air from the outside. Nearly half of the foul air

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With Bede Paint Heaters you can completely stop blushing of lacquers *without the use of expensive retarders!* At the high temperatures produced by Bede Paint Heaters it is virtually impossible to create a blushing condition — and due to the improved flow conditions of the paint, sags, runs and orange peel are greatly reduced. One coat takes the place of two — and the smoothness and depth of film is conspicuously improved.

Bede Paint Heaters have been tested and tried in hundreds of industrial plants. Here's why you'll prefer Bede Paint Heaters:

- FIRST and ONLY Paint Heaters tested and passed by Underwriters — proved completely explosion-proof!
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WRITE . . . For your Free copy of "The Hot Spray Process . . . Advantages — Causes — Effects" by James A. Bede.

removed from the oven is taken from the first baking zone.

Depending upon the type of paint used inside as well as outside the steel barrels, the finish is baked from 14 minutes to 37 minutes at temperatures of 250° to 600° F.

Silk Screening Names and Trade Marks on Conveyor

At the exit end of the oven barrels are mechanically headed up in a vertical position; then they travel down a long incline by roller conveyor to floor level where they are transferred to a moving belt conveyor. Here names, trade-marks, etc., are applied by silk-screen stenciling as the barrels travel slowly along. An air-drying material is used for this work. The barrels travel 240-ft. for a thorough air hardening of the process paint before they are handled again. The end of the conveyor on which they travel extends into a freight car or trailer truck at the loading dock.

Paint Heaters Used in Circulating System

Paint to be used soon is kept in a central paint supply and circulating room where it is gently stirred from one to six hours before it is to be used. Power-driven agitators stir the paint in the respective shipping rooms. Then these drums are transferred to the other side of the room and connected to circulating pipe lines which lead to the spray booth.

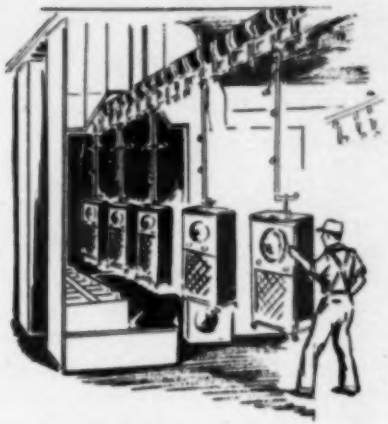
Paint is circulated at 55-lbs. pressure through copper pipes which extend to the paint heaters, to the spray booth, and back through filters into the drum from which it came. Just outside the paint supply room each pipe carries the paint to and from a separate paint heater where it is heated from 130° to 165° F., depending upon the type of material being used at the time.

The five gauges you see through opening at floor box are connected to five paint heaters. Electrical switch boxes and conduits appear above the back of this floor box.

From the paint heaters insulated copper pipes carry heated paint to the spray booth. There is a minimum of heat loss due to the pipe insulation and the fact that only a 4-ft. length of hose connects the supply line with the fixed guns.

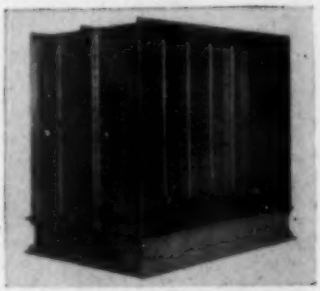
We use synthetic enamels at spraying viscosities of 20 to 27 sec.

Down Go Finishing Rejects When You Control DUST!



The Easy, Thorough Way Is with "Buffalo" Units

You can devote a good many man-hours to keeping airborne dust off freshly coated work. But doesn't it make more sense to let a "Buffalo" Air Washer or Exhauster do the "housekeeping" for you—continuously, thoroughly and without bother? Initial cost of "Buffalo" Units is offset many times through long years of service. *Many "Buffalo" Air Washers are still removing dust efficiently after more than forty years on the job!* WRITE NOW for all facts on this easier, more thorough—and cheaper—way to cut rejects caused by dust.



"BUFFALO" AIR WASHERS keep your air clean continuously with very little attention. WRITE FOR BULLETIN 3142-D.

"BUFFALO" INDUSTRIAL EXHAUSTERS draw off dust, fumes, grit at very low cost. Also minimize fire hazard in paint spray booths. WRITE FOR BULLETIN 3576.

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VENTILATING AIR WASHING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

Blast Cleaning Metal Parts

Airless (dry) blast cleaning is used to prepare parts for corrosion-resistant coatings.

SERVEL, INC., of Evansville, Indiana, has an improved 1950-model gas refrigerator which is being produced at lower cost. One of the changes that has made lower manufacturing costs possible is the development of a new method of fabricating the freezer shelf and coils. Servel engineers say that modern blast-cleaning equipment, by properly preparing surfaces, makes the use of this new method possible.

Due to the unique refrigeration principle employed by Servel, the freezer shelf coil must be made of steel. Since steel will rust, this steel tubing, on the bottom side of the shelf, must be protected by some sort of permanent corrosion-resistant coating. Also, the shelves and coils (which are fabricated separately) must be joined together.

Dana Cope, Servel plant engineer, shows refrigerator shelf coil, one of many parts being cleaned by airless blast-cleaning.

Previously, Servel used extruded aluminum shelves formed around the steel coils, but this was an expensive process. Now the steel coils are coated with aluminum and at the same time metallically bonded to the aluminum shelf. This process is a considerable step forward because the end result is better heat transfer, which means better refrigeration and better all around performance.

An air airless centrifugal-type of dry blast-cleaning equipment, recently installed, provides an excellent method of preparing these steel coils to receive the aluminum coating. A 14-ft. LG Rotoblast table is the machine used to prepare the coils for their aluminum coating—and for the cleaning and surface preparation of other small parts prior to assembly.

The machine blast cleans a variety of metal parts, some of which are extremely intricate, in two passes through a powerful stream of abrasive. This operation is performed at a speed sufficient to keep three operators busy loading, unloading and turning the pieces. Evaporator coils, gas heat exchang-

Three men are kept busy loading, positioning and unloading the metal parts on this exposed portion of the 14-ft. rotating table of an airless blast-cleaning machine at Servel, Inc.

er assemblies and other items to be blasted with abrasive, approach and leave the cleaning machine by an automatic conveyor.

Spot Blast Cleaning with Hose

Unfortunately, not all jobs are suited to cleaning in an automatic, push-button rotating-table blast-cleaning machine. For instance, among the several cleaning jobs at Servel's plant, one includes coil units, already coated, which have been welded together for final assembly. At the juncture of these welds it is necessary to blast the steel coil surfaces clean and recoat these points with corrosion resistant zinc which is applied by a heat processing method (the previous coating having been destroyed by welding.)

To do this job without redipping the whole assembly, the welded tubing is conveyed into an airblast room where it is "spot blasted" by three operators, each working in an individual compartment with an individually controlled hose blast ma-

chine. The blast-cleaned tubing moves by conveyor through the room and out to the metallizing stage where zinc wire, acetylene and compressed air are used to "spot plate" it where needed.

Servel's plant engineer, Dana Cope, declares that the company is pleased with its new blast-cleaning equipment and the part it is playing in economically cleaning various metal parts for gas refrigerators.

Editor's Note: Facts and photos for this article furnished through courtesy of Pangborn Corporation (blast-cleaning equipment), Hagerstown, Maryland.

Two S.-W. Appointments

G. L. Hehl, General Manager of the Industrial Finishes Division of The Sherwin-Williams Co., Cleveland, Ohio, announces the appointment of Donald S. Gaarder as Assistant General Manager, and Lee Cotton as Co-ordinator of Technical Operations for this important division of the company's activities.

Lee Cotton and Donald S. Gaarder

Gaarder will assist Hehl in managing the Industrial Finishes Division, which deals with product finishes and finishing methods of producers, fabricators and reconditioners in the appliance, furniture, implement, automotive and many other industries.

Cotton will handle liaison between Industrial Division Headquarters at Cleveland and Sherwin-Williams Laboratories at Chicago, Newark, Dallas, Cleveland, Oakland, Los Angeles and Gibbsboro, N.J.

Maas & Waldstein Adds Two Engineers to Eastern Division

Dr. G. Klinkenstein, President of Maas & Waldstein Co., manufacturer of lacquers, enamels and synthetics, Newark, Chicago and Los Angeles, announces the appointment of two engineers to the company's eastern division.

Francis A. Czech and Roy S. Benjamin

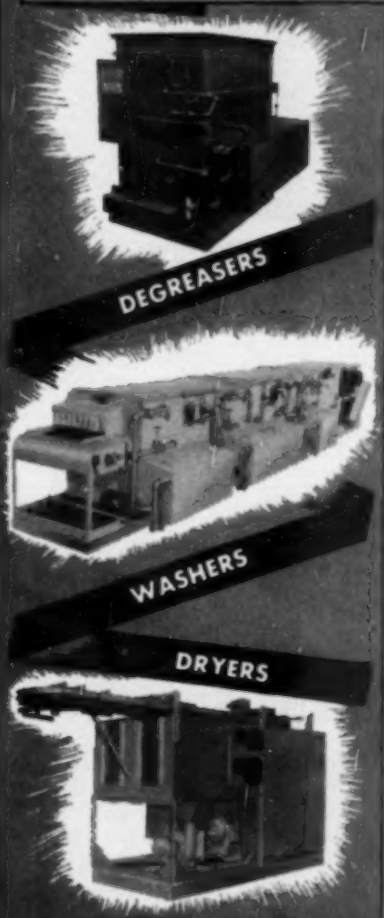
Mr. Roy S. Benjamin has had 15 years of experience in research, development and technical service of industrial finishes, as well as the installation and technical servicing of electrostatic spray equipment and infra-red convection ovens. Mr. Benjamin will concentrate on the eastern Pennsylvania area which includes the southern part of New Jersey and Baltimore.

Mr. Francis A. Czech entered the U. S. Navy after receiving his chemical engineering degree from Union College, Schenectady, N.Y., and upon release from active duty he spent several years with the General Electric Co. at Electronics Park, Syracuse, where he became very familiar with organic coatings and related processes.

Mr. Czech's broad technical background and familiarity with industrial finishes, as well as plating techniques will prove invaluable as another technical service engineer that Maas & Waldstein Co. has to offer industry. Mr. Czech will call on manufacturers using organic coatings, in south central New York State, including the north central section of Pennsylvania.

Dr. Klinkenstein stated that, " in order to provide our customers with the technical service they require for satisfactory operation of their finishing departments, only men with formal engineering background will be appointed to represent our company in the capacity of technical service engineers. It is not enough to be only familiar with organic coatings; rather it is essential, today, to be fully informed of the complexities of plating departments as well as the complete comprehension of electrostatic spray systems, infra-red baking, convection, induction and all other phases of finishing department problems."

for METAL PARTS
DEGREASING, WASHING, DRYING



OPTIMUS VAPOR DEGREASERS, all types, vapor, vapor-immersion, vapor-spray, and combinations of these. All sizes from small batch-type degreasers to custom-built monorail or cross-rod conveyor models.

OPTIMUS METAL PARTS WASHERS, single or multiple-stage—screw drum or conveyor, mesh belt or monorail types.

OPTIMUS DRYERS—embody a specially designed system of adjustable directional jets, temperature, turbulence, and recirculation, to assure adequate drying after washing, before painting, and spotless drying after plating or polishing.

We offer you our experience in planning, designing, engineering and servicing metal cleaning equipment. Contact your local OPTIMUS office for information and advice on cleaning methods, or write us directly.

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The only degreasing solvents for all metals or combination of metals. More stable, both as a liquid and as a vapor, than any other chlorinated solvent. Warehouse stocks in all principal cities and industrial areas.

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FOR CLEANING · RINSING · DEGREASING · PICKLING AND DRYING OF METAL PARTS

Industrial Engineering Service

Charles Delmar Townsend, registered professional engineer, and member of A.S.M.E. and A.S.M. has established a new aid to small business and the business executive. Professional Expediting Service, 1913 Lake Ave, Fort Wayne 3, Indiana, operates on the principle of following through on a job without interruption, thereby speeding up the solution or completion of the work. Such items as market surveys, plant layout, location of hard-to-find items, preventive maintenance and the placing into production of new products are a few of the problems that can be expedited by this service.

A new service recently added is the operation of a clearing house for companies and individuals who need either manufacturing facilities or new products.

E. N. Field Represents Standard Varnish Works in Conn.

Ernest N. Field has been appointed a technical sales representative for Standard Varnish Works, New York, according to an accouncement by Mr. Carl Bauer, Industrial Sales Manager. Mr. Field's activities will be concentrated in the Connecticut territory.

A graduate of the University of Alabama and Wesleyan University, Mr. Field has had wide experience with modern industrial finishes.

E. A. Skonberg Becomes V. P. and G. M. of Lehwood Corp.

Elmer A. Skonberg has been elected Vice President, General Manager, and Director of Lehwood Corp., 1703 S. Ironwood Drive, South Bend, Indiana. The election is effective April, 1950.

He will have full management responsibility for the further development and promotion of the Lehwood wood finishing processes. The first of these processes—virtually a lumber up-grading process—takes low grade lumber and processes it into beautiful, distinctive, pre-finished paneling called "Amerwood".

Another process developed by the company is a staining setup for furniture and other finished wood products.

A graduate of Massachusetts Institute of Technology, Mr. Skonberg was formerly Chief Engineer and Plant Manager of the Furniture Division of the Mengel Co. of Louisville, Ky.

Detrex Management Conference

Industrial division managers for all regions in the United States have just completed an intensive conference at the home office of Detrex Corporation, Detroit 32, Michigan. Technical information was released on the latest development in the design, manufacture, and application of product cleaning and rustproofing processes, equipment and chemicals.

This group, recently enrolled at the DeVilbiss Co.'s school of spray painting, assembled for a photo on the lawn at the company's plant in Toledo, Ohio.

The DeVilbiss Training School schedule for the remainder of this year offers a choice of five different weeks of instruction in industrial finishing. These starting dates are July 31, August 21, Sept. 25, Oct. 30 and Nov. 13. There is no charge for instruction. Applications and inquiries should be sent to the DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio.

Leave Those Baffle Plates in!

Why removal of baffles from a spray booth caused trouble, and what their replacement did.

By George A. Conrad
Service Expert

DURING A RECENT visit to a plant, the owner invited me to look at the new automatic spraying machine they had installed. As we entered the room, I noticed a heavy haze of overspray present in the air. Although the installation was practically new, all bulbs and reflectors of the infrared drying section were so coated with dust that it had been necessary to slow the conveyor to give time for the coated work to dry or bake. In an effort to remove the fog, exhaust fans had been placed in several windows.

Excellent Spray Unit, but No Replacement Air

Inspection of the spray booth showed that both the exhaust fan and the entrance to the exhaust duct were heavily packed with lacquer overspray and that there was little or no air movement across the face of the spray booth. Since there were no baffles in front of the fan, I suggested to the owner that he devise some sort of distribution system to catch the overspray. At this point the foreman told us that there had been baffles in the booth, but when the booth did not exhaust properly, they were removed.

What happened was this: An expensive and well-engineered spraying unit had been placed in a closed room without any provision for replacement of the air which was being continually removed. During cold weather, with the windows closed, the fan could not remove the overspray. It was simply trying in vain to pull a vacuum in the room. Instead of taking care of the problem at its source the thoughtless maintenance man had pulled out the baffles thus exposing the exhaust fan and exhaust duct to the overspray from three spray guns. In a short time the exhaust fan became packed with overspray until its efficiency was reduced to practically zero. The exhaust fans placed in the windows only made matters worse by working against the already crippled exhaust.

The remedy: The exhaust fan and exhaust duct had to be completely dismantled and cleaned. The baffles had to be replaced. Openings were cut in the walls separating the spray room from the remainder of the factory. Shallow ducts were built in these openings, and in the ducts were mounted the fans which had been used in the windows. They were mounted so

that they forced air into the room, from the factory, through filters. The cleaning alone cost a day's production.

Troubles Occur After Baffles Are Removed

This is not an isolated case. The practice of removing baffles from a spray booth is too common, especially in winter. It is a foolish and dangerous practice. Baffles were placed there by booth designers who know, from experience and technical knowledge, the necessity of having them. Not only are baffles necessary to distribute the flow of air evenly across the booth face, but the bulk of the overspray is deposited on them instead of on the fan blades. The importance of this fact cannot be over-stressed. While overspray on booth walls may be soft and easy to remove, the fan blades hit it with tremendous impact; as a result it becomes hard and tough to remove. Often fan blades get out of balance as a result of these accumulations of overspray.

There is no satisfactory coating to protect the rotating fan blades like stationary parts (spray booth walls, etc.) are protected. As overspray collects on the fan blades, they soon lose all semblance of their original contour—and with it, their efficiency. An excessive load is thrown on the fan motor. However, the worst feature is the fire hazard, from friction developing in the exhaust duct packed with dangerous paint residue, or from spontaneous combustion. The solvent fumes which the disabled fan fails to remove from both the room and the duct create a constant risk of explosion.

When a spray booth fails to draw properly, try to find out why. Then attack the trouble where it starts. Call in a spray booth serviceman, if necessary, but don't take out those baffles.

Members of metal cleaner technical staff of Cowles Chemical Co., Cleveland, Ohio, who attended a recent sales clinic. Formal announcement of a series of new Cowles products specifically designed for efficient buffing compound removal was made at the clinic. Reading from left to right (seated): Fred H. Hitchcock, John W. Dobson, Robert L. Smith, M. P. Boland and Norman E. Garman; (standing): J. A. Barnes, Clyde E. Lowe, E. A. Lord, Technical Dir. C. W. MacMullen, Manager E. F. Clark, Charles W. Churchill and C. G. Ozar.

What Should Catcher Do?

Ninth inning. Tie score. Two out. Men on first and third. Man on first attempts to steal second. Should catcher throw to second or third?

Answer: *Under these circumstances man running to second is unimportant. Catcher fakes throw to second, and then attempts to catch man at third.*

There is no question what you should do to catch abrasive dusts with

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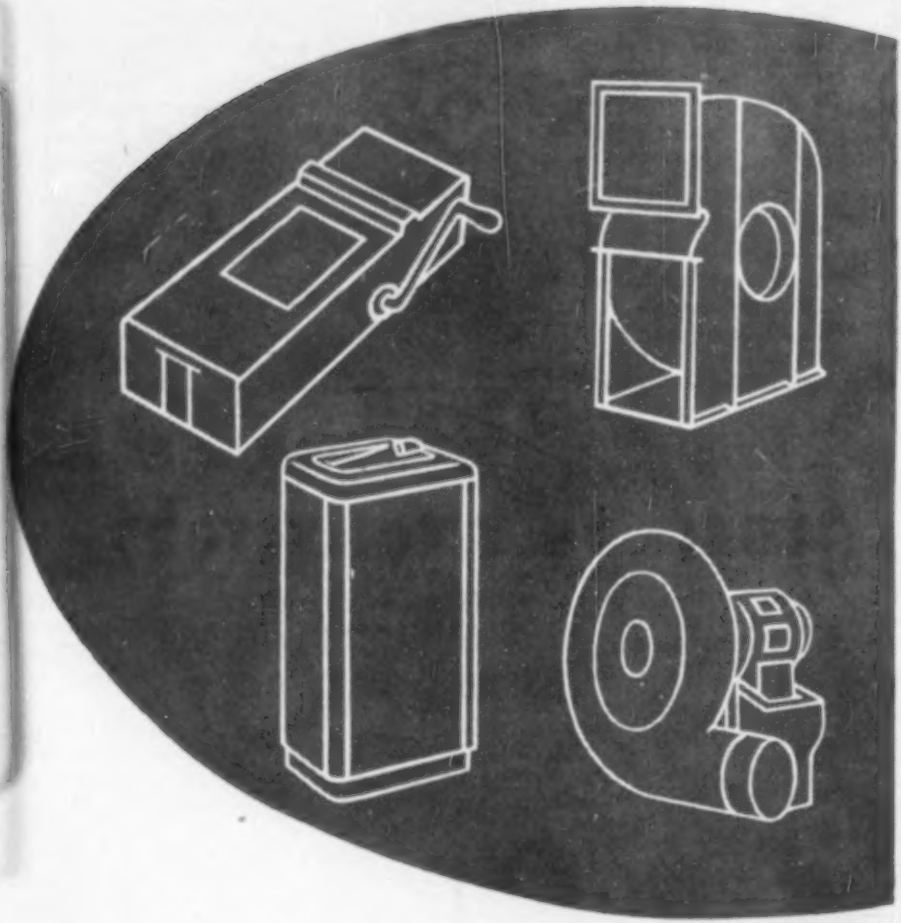

✻ Finish used here was Metalustre Enamel. Manufacturers of many other sheet metal products, such as compressors, air conditioners, water coolers, registers and exhaust fans, are using Metalustre Enamel to brighten their product and keep finishing costs low. Remember, the unsurpassed quality of Lowe Brothers Industrial Finishes means unsurpassed *finishing results*.

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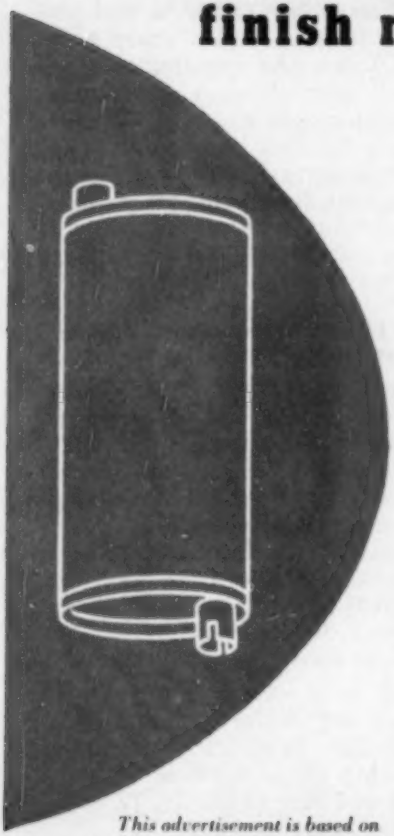

This advertisement is based on facts from the Lowe Brothers Industrial Case History Files.

"Price competition" was the major problem of this auto muffler manufacturer. When analyzing the company's finishing operation, a Lowe Brothers "Finishing Specialist" found that the method employed was responsible for unnecessary loss of material through "over-spray." He recommended better spraying methods and suggested a finish* that could take greater reduction, thus reducing material costs. These recommendations resulted in the manufacturer's needing only 10 gallons of finish per day for the same number of mufflers that had previously taken 40 gallons per day—with a corresponding savings in labor cost.

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Consistency Measurements

By Frederick K. Daniel
Chemical Consultant
Kew Gardens, New York

SILK SCREEN process paints or enamels must have a carefully controlled flow—sufficient to obliterate screen marks, and limited enough to hold a sharp print line. These two requirements are difficult to combine; and the paint formulator's task is made more difficult by lack of suitable tools for measuring these qualities. In this article I will discuss some of the physical characteristics of screen enamels and ways to measure them.

Flow of Liquids Measured by Viscosity

The flow of a true liquid is completely defined by its viscosity, and it can be measured, in absolute units (poises), by various viscosimeters. In these so-called Newtonian liquids, the flow (rate of shear) is proportional to the applied force (shearing stress). True liquids do not fulfill the above mentioned consistency (rheological*) requirements of screen enamels.

Like most other paints, screen enamels are distinctly non-Newtonian systems in which no linear relationship exists between shearing stress and rate of shear. To define

*Relating to the deformation and flow of matter.

Left. Fig. 1—Place gauge on a level table and pour in process paint until the trough of gauge is level full; then up-end the gauge and observe the flow of paint as it spreads across numbered parallel lines of the gauge. The author suggests that readings be taken at 10, 30 and 60 second intervals. See flow charts 2, 3, 4 and 5.

in Silk Screen Enamels

How to measure the flow, the viscous drag and certain other characteristics of screen process paints, so as to find out what their performance will be when they go into production.

their rheological properties it is necessary to know the rate of shear at more than two different shearing stress values. One-point readings are meaningless and highly misleading. (See Reference I at end of article.)

Complete rheological information on an enamel can be obtained by means of variable-speed rotational viscosimeters like those made by Interchemical and Sun Chemical Corp. However, these instruments are research tools primarily. They are expensive and slow to use; they need a skilled technician to run them and a physicist to interpret the results.

The Stormer viscosimeter, widely used in the paint industry, works well enough in the high shearing stress range, but it is not suitable for measuring "flow" in the customary sense of the word. The term "flow", in the narrow sense in which it is used from here on, *refers to the movement of a liquid or semi-liquid material at the low shearing stress exerted by gravity only.*

Flow of Material Often Judged by Spatula

The chemist and screen printer usually judge the flow of any paint material by means of a spatula. The way in which a paint runs off the spatula—fast or slowly, stringy or short—tells the experienced operator much about that material's consistency, but the information is of a qualitative and subjective nature only. The operator must rely on his memory to discover differences between various paints, or changes due to aging in the same paint. In no case can he communicate his results to others.

The need for a simple instrument to measure the flow of screen paints has been apparent for a long time. Such an instrument was developed recently. It has proved to be useful in the development of uniform screen enamels, for production control in the paint plant, and for helping the screen printer prepare paints of proper printing consistency. The instrument is known as the Daniel Flow Gauge.*

Practical Flow Gauge to Measure Process Paints

The Daniel flow gauge, shown in Fig. 1, consists of a semi-circular trough of ½-in. radius, 5-in. long, supported by two end plates. One end plate is flush with the upper edges of the trough. The other end plate is 5x5¼-in. and has ⅛-in. graduations, from 0 to 26, starting with 0 at the open end of the trough. [*Cont'd on page 46*]

*Manufactured by Henry A. Gardner Laboratories.

To use the flow gauge shown in Fig. 1, place it on the level top of a work bench or table and fill it while it is in this level position. When the trough is filled (but not so full that a convex meniscus forms) you up-end the gauge and its contents quickly (but without jerking or jarring) so that the calibrated end plate is at the bottom and paint flows down and spreads out over it. As the bulk of the material collects on the base plate, the shearing stress diminishes and the enamel continues to flow more slowly or stays put, depending on its degree of thixotropy*. (See reference II at end of article.) The more fluid the paint, the higher its numerical value on the flow gauge.

Readings are taken at given time intervals, counting from the moment of the up-ending, on. Ten, 30 and 60 second flow readings give characteristic curves.

Factors That May Affect Flow Gauge Readings

Flow readings are influenced by

1) Atmospheric temperature.

2) The specific gravity of the enamel.

3) The time lapse between filling and up-ending the gauge.

Temperature is the most important of these factors. All tests must be made at a specified temperature, preferably 77° F., to give reproducible results.

The effect of differences in specific gravity is a minor one and need not be taken into consideration. Heavy enamels generally tend to give somewhat higher initial flow, but the readings must still fall within the specified limits.

Slow filling of the trough or delays in up-ending the gauge may cause slightly erroneous flow readings. A certain time cycle should be maintained in runnning all tests. The operator must stir the enamel well in the container, then pour it into the trough immediately, take off any excess material with the spatula edge and tip the gauge without delay. With a little experience the filling can be done in 10 to 15 seconds, and satisfactory agreement between readings made by different operators can be obtained.

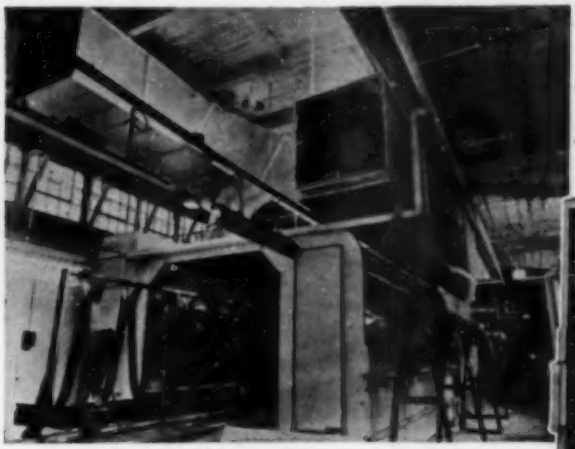
The Daniel flow gauge measures flow in arbitrary units without precise physical meaning. It is quite sensitive in the particular range in which screen enamels are printable. It detects not only slight differences in bulk flow, but also indicates, to some extent, the speed with which a slight gel structure is reformed in thin layers of paint. This is a very important factor. (See Ref. III at the end of article.)

Gauge Readings Predict Performance of Enamel

If less than five seconds is required to form a gel strong enough to stop the flow of an enamel layer of two to four mils thickness, there is not sufficient time for the paint film to level out and obliterate the screen marks. If, on the other hand, it takes too long for the film to "freeze" or become "set", it is difficult to obtain sharp prints.

A study of the correlation between flow gauge readings and

*Phenomenon shown by gels, namely that of liquifying on stirring and resolidifying on standing.



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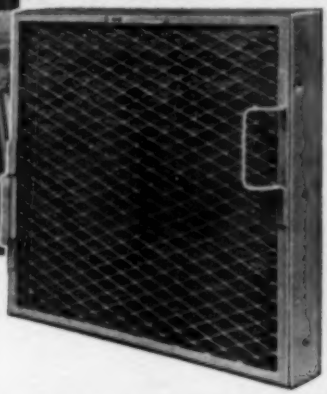

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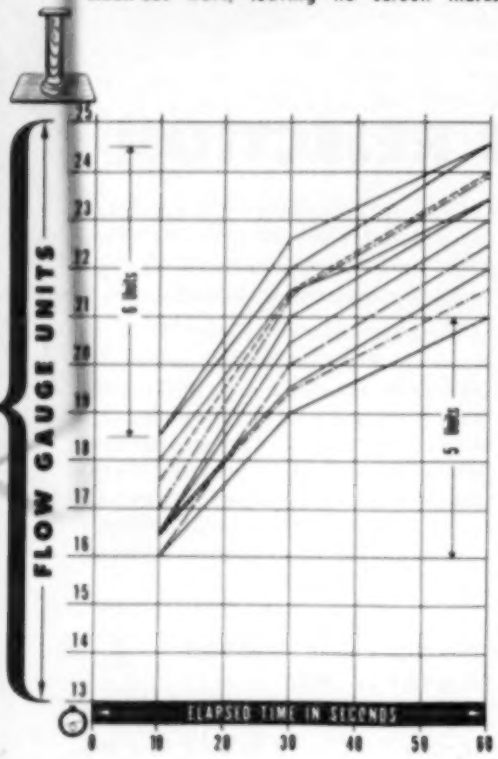
printing quality—that is, smoothness of film, absence of screen marks and sharpness of detail—shows that the best results are obtained in a rather narrow flow range, regardless of the color and other properties of enamels. In judging the flow, it is necessary to take into consideration both the absolute values and the increments between the 10, 30 and 60-second readings, that is, the slope of the flow curve. This is shown in Charts 2 and 3.

Chart No. 2—Flow curves of eleven process paints which were selected for the excellence of their printing qualities from a group of 50 process paints. Process paints that have these characteristics produce clean-cut work, leaving no screen marks.



Flow Charts of Good and Poor Process Paints

Chart No. 2 represents the flow curves of 11 process paints picked from a group of 50 for the excellence of the print. Chart No. 3 shows the flow curves of 11 enamels picked as unsatisfactory from the same 50 enamels. They were selected at random from enamels of all colors, produced by five different manufacturers.

The enamels presented in Chart No. 2, when properly used, show a smooth appearance without screen marks or orange peel effect; and all show a clean, sharp printing edge. The curves are all similar in character. In some, the 10-second value is higher or lower than in others, but they all run essentially parallel and they all have a 60-second flow value of between five and seven flow gauge units higher than their 10-second value. For fine print, for instance in reverse small lettering, the flow values must be somewhat lower than shown, but the curves should still resemble those shown in Chart No. 2.

Most Desirable Flow Range for Best Work

The flow curves in Chart No. 3 also have a common character. They differ from those in Chart No. 2 by their lower increment, expressed in the more horizontal slope. Some enamels have nearly the same flow at the 30-second reading as they do the 60-second reading; and, in most of them, the increment between 10 seconds and 60 seconds is only between 2½ and 4½ units.

The most desirable flow range may be defined as follows: For

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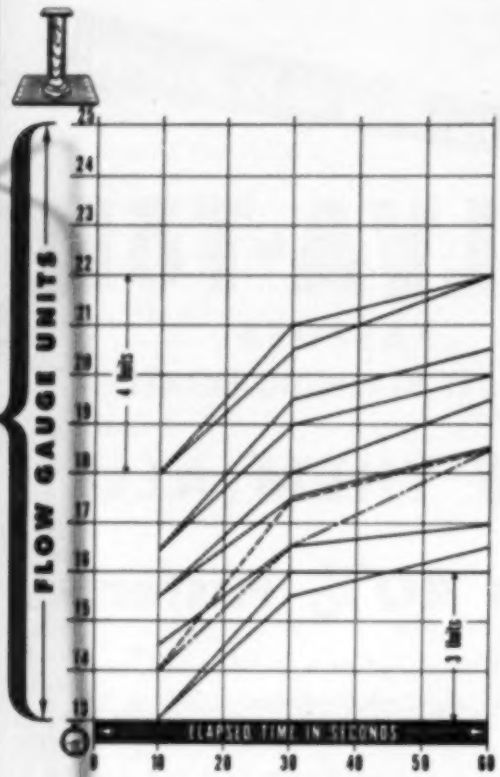

Chart No. 3—Flow curves of eleven unsatisfactory process paints—that is the least satisfactory in printing qualities—picked from the same group of 50 process paints. (Same group from which those shown in Chart No. 2 were selected.)

large printing areas with no fine detail (No. 6 to 10 screen) the 10-second flow should be between 16 and 18½ units; the 30-second flow should be 3 to 4 units higher; and the difference between the 10-second and 60-second reading should be 5 to 7 units (at 77° F.). For example, an enamel with a 10-second flow of 16 units should test 19 to 20 units at 30 seconds, and 21 to 23 units at 60 seconds. An enamel with a 10-second flow of 18½ should read 21½ to 22½ units at 30 seconds, and 23½ to 25 units at 60 seconds. Generally the 60-second reading should not exceed 25 units. A good average reading is 17, 20½ and 23 units at 10, 30 and 60 seconds, respectively.

For prints with fine detail (No.12 screen and finer) the flow values should be about 12 to 15 units for the 10-second reading, from 3 to 4 units more at the 30-second reading, and with a total difference of 5 to 6 units between the 10-second and 60-second readings. A good enamel for the fine prints may read 13, 17 and 18½ at 10, 30 and 60 seconds, respectively, on the flow gauge.

Flow vs. Viscous Drag

A satisfactory correlation is thus established between the flow gauge reading and the appearance of the finished print. It becomes quickly apparent, however, that flow is not the only rheological property to be considered. Enamels of identical flow often behave quite differently from the squeegee man's point of view. Some can be pulled across the screen stencil easily; others offer considerable resistance (viscous drag) and show undesirable properties, such as poor release and gumming or tackiness.

These differences in enamels become most apparent when the fast moving squeegee exercises a high shearing stress. I mentioned before that the behavior of a non-Newtonian system at high shearing stress is unrelated to that displayed at the low shearing stress range which controls the flow properties. Thus the following four combina-

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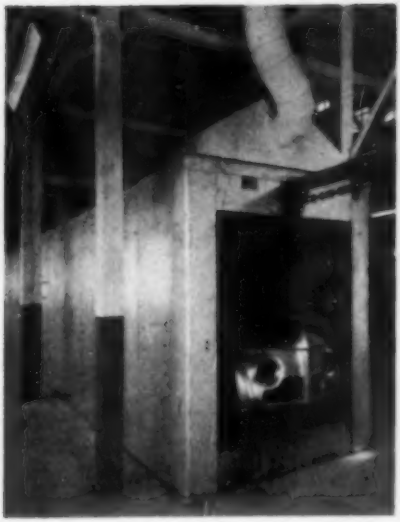

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Stormer Viscosity versus Daniel Flow Gauge					
Enamel No.	Color	Stormer Visc. In Seconds*	Flow Gauge 10, 30 & 60-sec.	Flow Difference; 10 to 60 seconds	Order of decreasing flow
1.	Maroon	80	19½ 22½ 24½	5 Units	A
2.	Dk. Red	103	16½ 20½ 23½	7 "	H
3.	Dk. Blue	120	18 21 23	5 "	E
4.	Dk. Brown	120	18½ 22½ 25½	7 "	B
5.	Dk. Green	136	18 22 24½	6½ "	D
6.	Black	150	17 21½ 24	7 "	F
7.	Yellow	152	18½ 22 24½	6 "	C
8.	Br. Red	180	16½ 20½ 23	6½ "	I
9.	Lt. Green	203	16½ 21 23½	7 "	G

Table I—Comparison of flow and viscous drag (as measured by flow gauge and Stormer viscosimeter) for one manufacturer's ready-to-print enamels (arranged in the order of increasing drag).

*100 revolutions, 500 grams load; (vertical paddles) at a temperature of 77° F.

tions of rheological properties can be found in a screen process paint:

1) High viscous drag; high flow value.
2) High viscous drag; low flow value.
3) Low viscous drag; high flow value.
4) Low viscous drag; low flow value.

An ideal screen process paint belongs to neither of these four groups. Its flow should not be so high that it will run off the gauge, nor should it be lacking in flow altogether. Its viscous drag should always be at a minimum.

The Stormer viscosimeter, useless for measuring flow, operates well in shearing stress range comparable to that of the squeegee. It, therefore, gives pertinent information about the viscous drag of a screen process paint and is recommended for this purpose.

Comparison of Flow and Viscous Drag

Table No. 1 gives a comparison of flow and viscous drag (as measured by the flow gauge and Stormer viscosimeter) for one manufacturer's ready-to-print enamel line. It is arranged in the order of increasing viscous drag. The right hand column in the table shows the order of decreasing flow. As expected, no close correlation between the flow and drag is apparent.

It will be noted that the differences in Stormer viscosity, ranging from 80 to 203 seconds, are even more pronounced than the differences in flow which is between 16½ and 19½ units for the 10-second readings. Therefore, the physical printing characteristics vary considerably. When the Stormer readings exceed about 280 seconds for 100 revolutions and a 500-gram load (at 77° F.), the printing resistance

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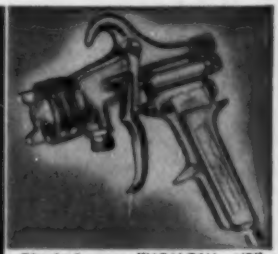

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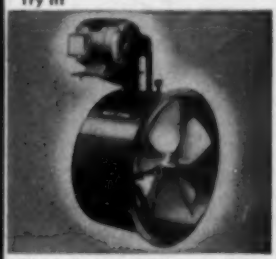

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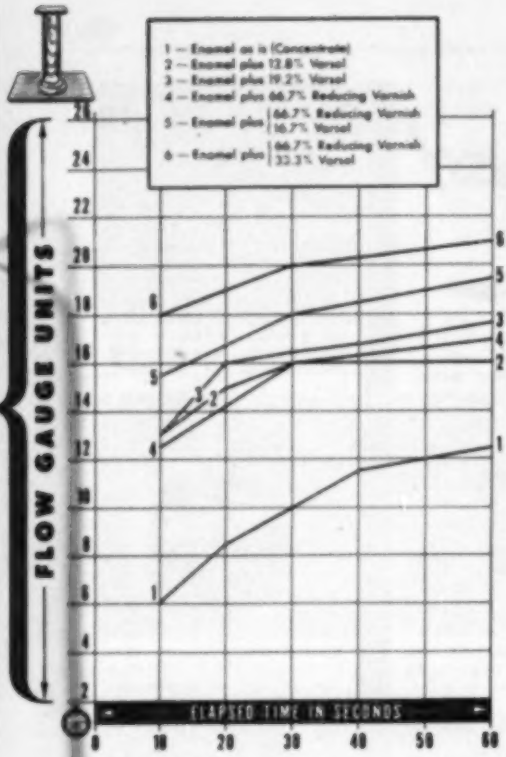

Chart No. 4—Showing flow changes made in an enamel concentrate by additions of different percentages and reducing materials.

is undesirably high and poor release is generally encountered. The viscous drag depends largely on the total pigment and inert loading of the enamel. In most cases it can be cut sharply by adding a small percentage of solvents. The Kauri-Butanol value of the solvent largely determines the change in flow character which accompanies the reduction in viscous drag.

Printing Characteristics Can be Pre-determined

It is of great value to the formulator when he can predict the physical printing characteristics of an enamel by means of the Stormer viscosity determinations, and when he can make the necessary adjustments to avoid excessive drag, without making actual screen printing tests. The printing test in the laboratory is not very satisfactory. It is slow and it is difficult to judge from a few impressions on a small screen how a process paint will act in a large screen on long production runs. Many a laboratory tested product has been rejected in the screen shops because it was too hard on the squeegeeman.

Of the nine enamels listed in Table No. 1, only Nos. 1 and 4 show slightly too much flow. These two are out of the good printing range and cannot be corrected. No. 1 is too dilute and does not print sharply on non-absorbent surfaces. No. 4 also is thin and does not have enough thixotropy. It tends to give defective impressions, especially at the ends of the sheets. On the other hand, a process paint that shows excessive drag by the test, can be "softened" by the addition of perhaps as little at 2% of the proper thinning solvent.

Skilled Operator Can Use Spatula Effectively

It seems worth noting, at this point, that the spatula indicates, qualitatively, both viscous drag and flow. When a process paint is stirred rapidly in the container, the operator feels the drag, and when he lifts the spatula out of the container, he can observe the flow. This dual function of the spatula explains its wide use as an instrument for determining the consistency of paint.

In the hands of a skilled operator the spatula is actually a very

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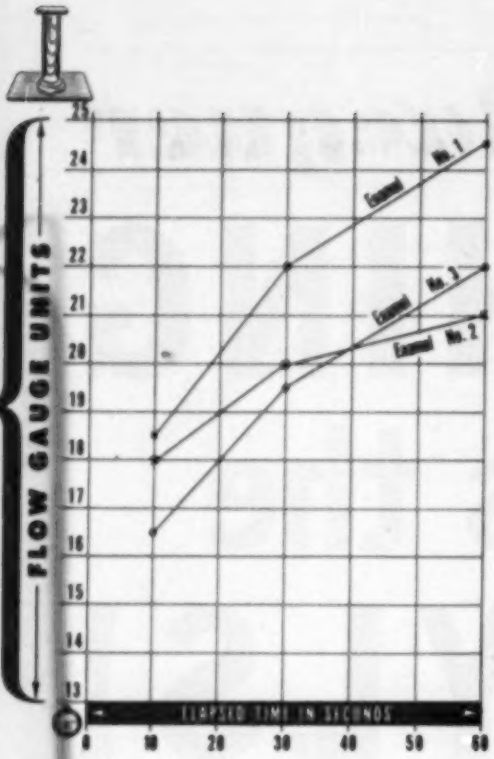

Chart No. 5—Comparison of flow characteristics of three ready-to-print yellow enamels.

sensitive tool. Only when quantitative information and reproducible results are wanted does it fall down, and the flow gauge and Stormer viscosimeter take over. These two complementary tools, used together, give rheological information on the important printing properties of paints which otherwise can be had only from a variable-speed rotational viscosimeter.

Few Adjustments Possible to Fix Process Paints

It follows from the above given facts that the screen printer is quite limited in the adjustments he can make in his process paints to get proper printing performance. True, he can spoil a good enamel by adding too much varnish or solvent, or by using a wrong solvent, but nothing that he can do will make a faulty enamel print well. The main responsibility for the printing qualities rests with the manufacturer, regardless of whether he produces ready-to-print paints or concentrates which must be reduced by the printer.

Enamels with too much thixotropy cannot be made to work in the screen shop under any condition. This is demonstrated in Chart No.4 which represents the flow curves of a concentrate enamel as received, and of the same enamel with various additions of solvents, reducing varnish and both. All of the prints show screen marks and, in the case of the higher additions, the opacity of the enamel becomes quite poor. All of the curves lack the characteristics named previously for good printing. The flow increment between the 30-second and 60-second reading is too low, regardless of the nature of diluent.

What Curves Showed in Three Yellow Enamels

Another example that shows the importance of proper formulation and consistency control in the paint plant is given in Chart No. 5. Here you see compared, the flow curves of three ready-to-print yellow enamels made by three different manufacturers. The differences in the flow curves cannot be explained by varying job requirements or customer preferences. All attempts to correct the flow of enamel No.2, and to make it print well, failed. Good

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Naz-Dar Company

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prints were obtained from enamels No. 1 and 3 without making any adjustments.

Chart No.5 clearly illustrates the importance of multi-point flow readings. Two enamels with equal flow at, say 30 seconds on the flow gauge, often have different flow values at 10 and 60 seconds. This indicates important differences in their printing performance. On the other hand, two enamels with no point in common but running parallel to each other indicate important similarities. Only slight adjustments may be needed to make the flow curves and the printing behavior identical. Therefore, it may be stated that the slope of the flow curve is even more important, from the rheological viewpoint, than the absolute numerical value at any one point.

Uniform Line of Process Paints is Desirable

Process paints or enamels with insufficient thixotropy are not encountered as often as those with too much thixotropy. They are usually found among the enamel concentrates. When a heavy paste of this kind is thinned to printing consistency, it shows excessive flow, and sharp prints are seldom obtained. The screen process printer finds himself confronted with the choice of a consistency that makes the squeegee pulling very hard—and, therefore, the printing operation slow—or a consistency that produces blurred prints.

Generally speaking, much more all-around control is needed in work with concentrates than with ready-to-print enamels. The manufacturer must strive to produce a uniform

line of products in which equal dilution gives nearly equal printing properties. This is no easy task. To accomplish it he must know both the flow character and the viscous drag of his material in concentrate form, as well as in the final printing state.

If the manufacturer succeeds, the screen printer needs only the flow gauge to determine the kind and the amount of material he should add to get a good printing consistency. The printer who takes the trouble to test and adjust his enamels on the flow gauge beforehand will save time and materials and improve his chances of producing printing of uniformly high quality.

References:
I) Henry Green, "Industrial Rheology and Rheological Structures", John Wiley & Sons, New York, 1949.
II) H. Freundlich, "Thixotropy", Hermann & Cie, Paris, 1935.
III) "Rheology of Surface Coatings" page 59, RHB Dispersions, Inc., Bound Brook, N.J., 1946.

Egyptian's W. J. Spence Feted at Service Dinner

On May 11, Mr. William J. Spence, Massachusetts Sales Representative for the Egyptian Lacquer Mfg. Co., was the guest of Sales Manager, Philip H. Beach, at a special dinner held in his honor at the New York Athletic Club. The occasion was the completion by Mr. Spence of 25 years of service with Egyptian.

Mr. Spence received a congratulatory gift of a gold watch from Mr. O J. S. deBrun, President of the company.

The ten guests represented a total of almost 400 years of service with the company—a remarkable record.

Aluminum Industries Expands Its Paint Division

Aluminum Industries, Inc., Cincinnati, Ohio, manufacturer of Permite Ready-Mixed Aluminum Paints, has expanded the production of its Paint Division to include a complete line of high-quality varnishes, sealers and reinforcing oils.

Kirker Chemical Co.'s baseball team (Paterson, N.J.) plays in local Industrial League.

FINER FINISH SANDING AT A NEW LOW PRICE!

- Straight-Line Reciprocating Action—Leaves No Marks
- Only Two Moving Parts — Never Needs Oiling—Uses 110-120 v. A.C.
- Easy To Use—No Bearing Down — Continuous Use Doesn't Tire Operator
- Weight Less than 5 lbs.— Over-all Size, 3⅛" wide x 4½" x 7"
- Dust-Proof — Fool-Proof — Fully Guaranteed
- 21 Square Inches of Sanding Surface.

RUGGEDLY BUILT FOR ECONOMY-WISE INDUSTRIAL FINISHERS

The new Dremel Model 2000 is a fast-cutting, finish sander. It offers for the first time in the industrial field, a truly top-quality electric sander at a remarkably low price. Its rugged construction, trouble-free design, versatile performance—plus low initial purchase and operating cost—all demand your thorough investigation. Call your supplier, or write us for details.

DREMEL MANUFACTURING CO., 2404 18th St., Racine, Wisconsin

ELECTRIC DREMEL POWER TOOLS

EVERY SHOP NEEDS . . . EVERY SHOP CAN AFFORD THE NEW DREMEL ELECTRIC MODEL 2000 SANDER

Wax-Base RUBBING LUBRICANTS

By C. S. Powell
Rway Consultant Engineers

Using a wax-base lubricant instead of naphtha and paraffin oil gives faster cutting with finer abrasive paper, and there is no after bloom left on the finish.

SOMETIMES IN working out economies in finishing methods, the savings are realized in an entirely unexpected way. The finishing man who first tried out a wax-solvent mixture as a rubbing lubricant thought this would be a good way of "killing two birds with one stone"—using one material for rubbing and waxing. He found, on experimentation, that a wax rubbing lubricant is much better than the conventional rubbing lubricant in several ways. However, the rubbed surfaces still have to be waxed as a separate operation for best results.

Sanding With Paraffin Oil and Naphtha

For years it has been standard practice to sand lacquered furniture, using a mixture of paraffin oil (bought as "rubbing oil") and naphtha as a sanding lubricant, with fine carborundum papers and in rubbing compounds. The proportion used was about one quart of oil to one gallon of naphtha. The naphtha could be VMP naphtha, high flash VMP, or mineral spirits, depending on the preference of the individual finishing foreman or the custom prevailing in the factory in question.

The usual practice was to wet-sand first with No. 320 sandpaper and then with No. 360 or No. 400 sandpaper after most of the irregularities had been cut down. Finally the furniture was hand rubbed with fine steelwool or a felt pad saturated with a paste of the cutting lubricant and pumice stone. Where a higher polish was desired the tops were rubbed with soft waste, using a paste made of the sanding lubricant and rottenstone.

Oil Reduced Speed of Cutting—but "Bloomed"

The oil in the rubbing lubricant was necessary to slow down the rate of evaporation of the solvent. Even when all the solvent had passed off into the air the film of oil remaining tended to keep the finish from softening with frictional heat and clogging the abrasive paper.

The presence of oil in a cutting lubricant was not without its drawbacks. In the first place, the lubricating action of the oil reduced the

An Ounce of ZAPON Is Worth a Pound of Cure...

ONCE the wrong finish has disrupted your whole production line, irritated you and your customers, and piled up costs and rejects, finding a remedy can be a tough, frenzied task.

ZAPON stains, fillers, sealers, and lacquers will prevent these troubles because each is carefully formulated to meet *your* finishing requirements and operations.

ZAPON Development and Customer Service Departments offer you years of practical knowledge and technical training. When you have a problem in finishing, let us tackle your troubles.

Service from every angle... that's ZAPON

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

speed at which an abrasive paper cut down the finish. Secondly, sometimes the oil had a tendency to be absorbed by the resins in the lacquer. This absorption was accelerated, of course, by the heat generated during the rubbing operation.

Later on, the oil bloomed out of the finish and created a bluish haze on the surface of the work. This after-bloom of oil varied, of course, with the type of resins used in the lacquer but was usually present in varying degrees with most lacquers after rubbing with oil and naphtha. The bloom could be easily removed, but it was particularly troublesome when it did not appear for a week or so after rubbing.

Wax Lubricant; Faster Cutting; No Bloom

The use of wax instead of oil in a rubbing lubricant has helped to overcome the difficulties just mentioned. Firms who have experimented with a wax rubbing lubricant have found that abrasive paper cuts better with this material than with a lubricant containing oil. It is reported that a No. 320 sandpaper may be replaced by a No. 340 or No. 360 sandpaper to reduce sanding scratches, with no reduction in the speed of cutting down the finish. As a matter of fact, *a wax-rubbing-lubricant cuts almost as fast as solvent alone.*

The wax at room temperature is only slightly soluble in the solvent and is present as a suspension. As the temperature rises the wax melts and acts as a slip agent to prevent clogging of the sandpaper with the finish. Therefore, under the same conditions, a sandpaper will cut faster with wax rubbing lubricant than with an oil and naphtha mixture and at the same time more pressure can be applied to the work for a faster job without clogging the sandpaper.

Brighter Cleaner Finish; Final Polish Needed

In addition, the wax in the solvent acts as an evaporation depressant by forming a skin on the surface of a layer of rubbing lubricant, and it effectively retards further evaporation. This property of a wax-solvent mixture saves money in material and makes the rubbing-room a better place in which to work.

No trouble is experienced with oil-bloom when a wax-rubbing-lubricant is used because the wax is completely incompatible with the lacquer components. The net result is that the use of wax-rubbing-lubricant reduces costs in the rubbing room and produces a brighter, clearer finish. It does not, however, replace the coat of polishing wax which adds a final film of protection.

A wax-rubbing-lubricant consists essentially of a high boiling petroleum fraction, similar to kerosene, with the addition of 5% (by weight) of specially selected waxes. This material is currently being marketed by at least two firms and has apparently filled a real need for an improvement in rubbing methods.

Amer-glas Air Filter

A new replaceable type air filter, the Amer-glas, made in all standard sizes for forced air heating, ventilating and air conditioning systems, has been introduced by the American Air Filter Co., Inc., Louisville, Ky.

RECOMMENDED:

because it doesn't raise the grain

because it dries in 15 minutes

because it will not fade or change color in the grain or cause greying or greening.

Brolite WOOD FILLER

Another production-wise product by:

ANDREW BROWN COMPANY

5431 South District Boulevard, Los Angeles 22, California Laurel, Maryland

1223 East Pike Street, Seattle 22, Washington Irving (Dallas), Texas

FINISHING TOUCH FOR THE LAST WORD IN FINISHES! No wonder "a piano finish" has come to be the standard of comparison for all finishes. Here the mellow glow of DUCO Piano Lacquer on fine mahogany is being brought out by hand rubbing in the plant of a leading piano manufacturer. Modern finishing materials and old-time craftsmanship combine to produce a finish of extraordinary beauty and durability.

PIANO FINISH THAT PLAYS A BIG PART IN SALES

DUCO Lacquer for Pianos—typical of the 12,000 Du Pont finish formulas working for industry today

• Piano manufacturers have learned through the years that Du Pont DUCO Piano Lacquer pays off—both in sales and in trouble-free performance.

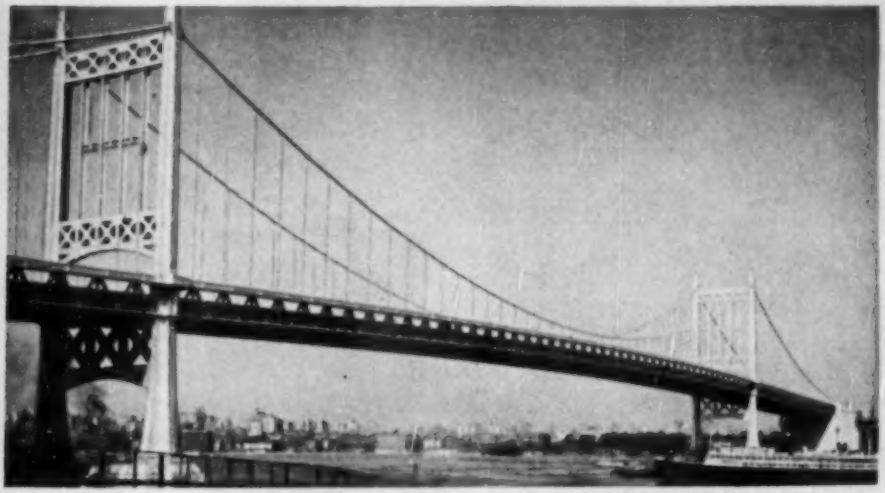
In the sales room, DUCO gives the piano a rich, satiny, eye-appealing luster . . . assures the customer that he is making a large investment wisely. In the home, DUCO keeps its beauty . . . wins long-term goodwill for the piano manufacturer. DUCO Piano Lacquer is one of 12,000 finish formulas that Du Pont has developed to meet the needs of industry. Whether you are looking for a way to improve your product, increase sales or lower production costs, contact the Du Pont Finishes sales technician in your area . . . or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Del.

DU PONT

REG. U.S. PAT. OFF.

DEPEND ON DU PONT FOI

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



PROTECTING A $44,000,000 INVESTMENT! On New York's huge Triborough Bridge, DULUX Metal Protective Finishes are used to combat corrosion of metal. DULUX Primers discourage rust chemically and provide a fine base for finish coats. And DULUX Top Coats form a tough physical barrier that resists extreme weather conditions for years.

DARK ROOM TESTS WHITE FINISHES for resistance to yellowing. Here chemists leave finished test panels in darkness up to three years... periodically check for color changes. Such tests protect manufacturers against losses due to permanent yellowing of finished merchandise left in storage for long periods.

FLEXIBLE FINISH FAMOUS FOR SALES! Venetian blind manufacturers know they can count on DULUX for sales appeal. The brilliant gloss of DULUX catches the customer's eye . . . a variety of long-lasting colors brings out the interior-decorator instinct. What's more, flexible DULUX gives years of protection.

BETTER FINISHES

PAINTS • LACQUERS • ENAMELS • VARNISHES
THINNERS • STAINS AND SPECIAL-PURPOSE FINISHES
FOR INDUSTRY

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

Notice the cocktail table with its bleached cork top and lacquered splayed legs. Especially attractive are the depth (thickness) of the cork top and the free form of the table designed by Mr. Paul Frankl.

Chicago Furniture Show

New Style Trends, Materials, Finishes, Colors and decorative motifs observed in furniture presented at the American Furniture Mart and the Merchandise Mart during the 1950 summer exhibitions.

BY ROSALIE FLANK

TRENDS IN HOME furnishings follow a peculiar pattern. A few daring forward-looking manufacturers simultaneously introduce some "spot" pieces or suites wherein they follow a particular theme or use a new material, finish or color. Suddenly, the alert market visitor becomes aware that here is the beginning of a new trend to be watched. If the trend hits, it becomes evident in every line, in every price bracket, and in almost every conceivable variation until, by the following market, a general monotony or similarity exists, with all manufacturers trying to ride the prevailing trend of the market.

Prices Up 5% to 7%; Deliveries, 60 Days

So it was with the Summer National Home Furnishings Market held in Chicago at the American Furniture Mart and the Merchandise Mart, June 19 to 29, where some 2500 manufacturers of home furnishings showed their lines to more than 20,000 buyers from all sections of the United States.

Prices too, follow a trend, with the leaders setting the pace; followers make adjustments to quickly fall in step. The market opened with price increases varying from 3% to 10%, but the leaders set a 5% to 7% pace, and most of the others quickly adjusted their price tags to fall in line. To many retailers the price increase meant a disruption of their buying plans, as they were forced to buy down to keep within buying brackets at retail levels. It was generally agreed that the buying public is exceedingly price conscious; and quality, at a price, keynoted much of the buying. [*To page 68*]

A 15-drawer arrangement, cleverly handled. The dresser is not bulky yet it gives usual drawer capacity. This piece is fashioned of mahogany in a bisque grey finish.

Foam rubber upholstery and a unique pillow seat cushion that is upholstered on top of springs, fashions this unusual sofa. The sofa measures 90-in. long and 30-in. in height, and follows the free-form movement now evident in many of the high-style lines.

Since most manufacturers have gone off quotas, and promise delivery by August, buyers shopped and noted, buying only where inventories warranted. All were confident that new merchandise could be obtained within 60 days upon demand. Buyers from sections where home building is booming were the best customers. However, these buyers wanted merchandise styled to fit into small housing units.

TV Influence Shown in Living Room Pieces

TV is still conceded to be the fairy godmother of the furniture industry; in fact much of the living room furniture was promoted from a TV angle. Revolving chairs, sectional sofas on rollers which might be easily arranged to permit easy viewing, and nesting tables and hassocks that can be distributed around the room for the accommodation of viewers were shown with monotonous regularity. Tables to hold TV receivers, adjustable reclining chairs and chair-ottoman combinations were all products of the magic wand.

Wild West Styles for Children's Furniture

Hopalong Cassidy was another influence which has gained momentum in sheeplike fashion, following the leaders of the previous market. Both juvenile furniture and groupings for older children showed the western cowboy influence. Stirrup-type drawer pulls, heavy maple plank-like construction and steer horn trims were all in evidence. Even manufacturers not working under Hopalong Cassidy royality arrangements hastened to bring into their lines any ranch-type furni-

A BASE HIT

Reliance Fillers are making a tremendous hit as a dependable base for the top coats in a number of America's finest furniture and cabinet plants.

Reliance Fillers are non-porous . . . do not bubble, swell or shrink; dry quickly; fill the pores to their full depth; wipe easily without stickiness; require no special thinners; are permanent in color and non-graying . . . thus enhancing the clearer color and permanence of the final finish.

Let us survey your needs and recommend the filler that will enable the finish on your product to make a base hit with your customers.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

Rely on R

ture that might ride the wave of popularity which this furniture is now enjoying.

Twin Chests (Mr. and Mrs.) Small Rolling Tables

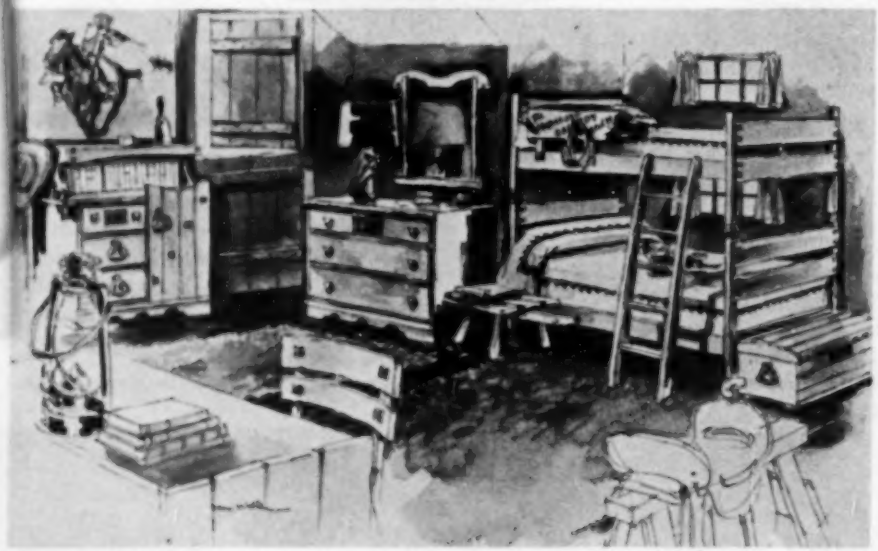
The twin or Mr. & Mrs. chests which originated as a six to eight drawer unit, then expanded to nine and 12 drawer variations by the addition of a central panel of drawers —these were in the follow-the-leader parade. However, with the demand for still more storage space, new variations made their appearance; 15-drawer capacity chests were newcomers; chests with more shallow drawers will probably find favor with many users of bedroom furniture.

Carts on wheels—an adaption of the old but ever popular tea cart—now appear in most dining room lines and in many chrome kitchen and dinette groupings. The small rolling tables are adapted to both modern and traditional designs.

The prevailing trend throughout the market was a livable combination of traditional and modern, now generally termed "contemporary". Borax furniture of the past has taken on the more sophisticated name of "commercial". Hardware has become larger, more decorative and much more inventive. Toned down light finishes and lightened dark finishes have come to a meeting of the ways.

For Comfortable Living; Fashionable Colors

Foam rubber, which had a spotty appearance at former markets, now is used extensively to fashion many upholstered lines. In the upholstered field, the follow-the-leader color appears to be green, pushed closely



Artist's drawing of new Hopalong Cassidy Ranch grouping shown at recent Chicago Mart.

KIRKER
WOOD FINISHES

The complete line for all operations

SEALERS — Thoroughly seal wood, with full foundation to hold out lacquer. Will not "cloud" stain and filler. Excellent sanding properties.

RUBBING LACQUERS — Level out smoothly with full depth of finish. Will dull-rub or take mirror-like polish.

WATER WHITE LACQUER — Ensures maximum color retention on pale and bleached woods, blonde, silver gray, and similar modern furniture effects. Rubs and polishes.

Available in gloss, semi-gloss, satin, and dead flat.

Kirker wood finishes offer maximum flexibility to resist marring, alcohol, and cold checks; and uniform high quality for lasting furniture beauty.

KIRCO Kirker CHEMICAL COMPANY

MODERN COATINGS ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

by grey. In the high style lines where trends originate, yellow, purples, blue greens and russet brown indicate possible general trends of the future.

Looking ahead to other possible trends of the future, as indicated by spot showings in high style lines at the Chicago market, keen observers are keeping their eye on these developments:

Plastic Finished Kitchen And Dinette Furniture

A plastic coated covering for tubular steel legs on metal furniture made its appearance in bronze, shiny brass and gun-metal grey. Used in conjunction with a wood-grained plastic top, the new effect is eye catching. Demonstrations were given to show that the metal could be dented but the tough coating remains unharmed.

A plastic applied over metal is used in a new "sea shell" mottled finish in brilliant colors of fire red, emerald green and clear yellow for the tops of kitchen and dinette sets.

Formica over wood in a new "Moonglow" pattern was also shown in brilliant colors.

According to one of the leading manufacturers, grey leads as the favorite color for metal kitchen and dinette sets, with yellow coming up fast; the latter color now accounts for 25% to 30% of sales.

Kitchen cabinets and bases, made of wood and equipped with porcelain metal tops, were finished in a plastic resin pastel finish. Jonquil yellow, powder blue, dusty rose and seafoam green were featured—priced $4.00 less than the conventional white, and outselling the white two to one.

Materials: Cork, Nylon, Cord, Glass, Cane

Cork, bleached or painted and applied to the top of cocktail and dining room tables, is a new note. The cork top is used in combination with lacquer and Cordovan mahogany bases.

Nylon upholstery fabric in a brocatelle finish—and nylon filling for upholstered pieces—had strong selling points. Ease of cleaning, sanitation and wearing qualities were stressed.

Cord-wrapped tubular metal frames—the cord "upholstery" being available in natural or assorted colors—fashioned unusual lounge chairs for indoor and outdoor use.

Beveled, squared-off glass for breakfronts and china cabinets gave a modern feeling to traditional designs. [*To page 74*]

The blocked pattern is a theme which is gaining momentum. This six-drawer twin chest has an unusual drawer pull arrangement. It is mahogany in new sand finish.

It's the difference that sells . . .

Perfection FLAT FINISHES!

In the photograph above you can actually see the difference between ordinary stearated finishes and clear-as-glass PERFECTION. It's this "difference", plus many other advantages, that are making PERFECTION FLAT FINISHES extremely popular today. You get all these advantages in both PERFECTION FLAT VARNISH and PERFECTION FLAT LACQUER. Try either one or both at our expense — write today for samples.

PERFECTION PAINT & COLOR CO.
Indianapolis 2, Indiana

Perfection SYNTHETIC FLAT FINISHES
WATER-PROOF LIQUOR-PROOF

Cane and pastel-colored leather inserts are effectively used in panels for trims on case pieces in some attractive bedroom and dining room groupings.

Walnut, Chestnut, Cherry, Mahogany; New Colors

Raised lacquer trims were used on Cordovan mahogany groupings, the raised lacquer being ornamented with colors or gold leaf.

Marquetry inlays and gold carving added a note of quality to otherwise simple pieces. Marble tops appeared on living room tables in a number of high style lines.

Walnut was more in evidence than in any market for the past decade, the walnut taking on new light shades of warm grey and tawny tones such as frosty plum and heather finishes. A dramatic new Palomino finish was shown.

Sandblasted wormy chestnut is a new variation, a change from the more standard limed oak and pickled pine which seems to be losing some of its former popularity.

Cherry was used to a greater extent than at any previous market, the fruit wood being used to fashion both modern and period groupings. Marble combined with cherry, and lacquers used with the cherry were effective contrasts.

Mahogany finished in many new unusual tones created considerable comment and much interest. A new Old Briar finish is effective. Another new note is a russet brown shade. Shaded cherry-red mahogany fashioned groupings are interchangeable with maple and fruitwood pieces. Other new finishes on mahogany include a new almond color, bisque grey and saffron yellow.

Shapes and Sizes; More Drawers in Dressers

The bases of modern case pieces, bedroom in particular, have been brought off the floor. Newest underpinning are brass loops that look like giant inverted hairpins. Tubular metal legs appear in more and more lines.

Small dining room tables, designed for the new living room dining room combinations so popular in the newly built homes, made their appearance in round, oval and oblong shapes. Round tables closed, measured 44-in. in diameter and extended to 56-in. Oval and oblong tables measured 38x56-in. closed, and extended to 68-in.

Living room tables ranged in size from tiny chairside models

An unusual drawer arrangement gives this chest seven drawer capacity. The shadow box frame, squared off panel design, and high polish brass hardware are newsworthy. The piece has been given an Albino finish.

For Color Retention on Light Finishes—

CRYSTAL CLEAR
WATER WHITE
LACQUER

• It's a time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, ermine and all pale, bleached and decorative effects so popular on furniture of today.

THE SCHAEFER VARNISH COMPANY
Incorporated
15th and Magnolia
LOUISVILLE 10, KENTUCKY

Use Schaefer's Crystal Clear Water White Lacquer

measuring 8x14-in. to large cocktail tables 42-in. square. A new variation of the step table was seen in a cocktail table in which three heights were used, each about 2-in. above the other, but all in a single unit.

Lazy susan table trays, sold as an accessory to the round dining room table, made a consistent appearance in traditional as well as modern lines.

Modern functional bedroom groupings showed a line-up of case pieces in which the double dresser which measures 57-in. wide, 19-in. deep and 32-in. tall is flanked by two end chests 16-in. wide, 19-in. deep and 32-in. tall. The end chests are the same height as the headboard of the bed. The 6-drawer chest that accompanies this grouping is 34-in. wide, 19-in. deep and 43-in. tall, the 11-in. difference between dresser and chest making an interesting variation. Twin bed frames with a single headboard were shown in many lines.

Charts bearing black, white and gray patterns of rated color strength are helping paint manufacturers to check and determine the hiding power of their products. A coating of transparent Vinylite resin prevents the paint from soaking into the paper charts, thus providing a good surface for application of the sample.

In addition, the Vinylite resin coating does not discolor. This color retention is important, since the results of a hiding power test depend on the color and shade of a chart after a known quantity of paint has been spread evenly over its one square foot or one-half square foot of surface.

Thickness of the paint film is easily calculated, and its hiding power can be determined either visually or by mechanical means. Charts are made to be used with Hunter Multipurpose Reflectometer for contrast ratio measurements. The charts are available in patterns of black over gray, gray over white and black over white—all colors of predetermined light-absorbing capacities. Photo courtesy of Bakelite Division of Union Carbide & Carbon Corp.

Lacquers · Sealers

Lacquers and Sealers in a wide variety of specifications. High or low solids. Glossy or flattened. For hot or cold spraying, for dipping or for special application methods. Tested for durability.

●

STAINS

GLAZES

FILLERS

SHELLAC

ENAMELS

UNDERCOATS

SPECIALTY FINISHES

●

IN STEP WITH THE TIMES

JAMES B. DAY & CO.

CHICAGO 14

INVITATION

Yes, this is an invitation to Furniture manufacturers from a furniture man whose farsighted thinking has made available economies in labor and space in furniture finishing that is sweeping through the industrial plants from Coast to Coast.

Now you can see first hand in practically every section of the country where furniture is made the startling results of a DeBurgh Finishing System installation.

There is no high-pressure salesmanship to it. Enthusiastic owners of DeBurgh Finishing Systems themselves will be glad to tell you their story.

You cannot afford to wait to learn what a DeBurgh Finishing System will do for you.

We invite you to write NOW for a list of furniture factories near you where you can see and hear first hand the PROOF of what can be done for you.

Investigate!

DeBurgh Conveyors

Patented and Patents Pending

For Assembly, Finishing and Upholstery

1741 K St., N. W., Washington 6, D. C.

Diversity

As there is a diversity of poses which a model can assume, so is there diversity in the finishes we develop.

In short . . . we produce a wide variety of decorative and protective coatings that are specially-made to give products individuality and genuine sales appeal.

When you want a finish that is different . . . superior to the mine-run stock coatings, contact our Creative Studio. Our experienced specialists will conceive the very finish your merchandise needs to make it a stand-out in your line.

Reputable firms are invited to have samples finished without cost or obligation.

No Tampering with Quality

ROCKFORD VARNISH Company
ROCKFORD ILLINOIS

Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

Please Correct This Error in Your June Copy

In June 1950 issue, in the article entitled, "Leather Artistry" beginning on page 67, please turn to page 76, right hand column, next to last line. A wrong line of type was substituted for the correct line and as a result, two sentences appear which do not make sense. This line should read "the leather is quite flat, extra press-", so the one complete sentence will read, "When the leather is quite flat, extra pressure on the pad will complete the adhesion".—*Ed.*

Hot Lacquer Spray

Please give the names and addresses of several companies that manufacture hot lacquer spray equipment.—*I. C. Co.*

Information supplied.—*Ed.*

Electrostatic Spraying

Appearing in the August 1947 issue of this publication, there is an article on Electrostatic Spraying that we are very much interested in. As this process may be relevant to the operation of our industry, we are requesting that you please send us a copy of the issue or simply tear sheets of the article.—*Pearlustron, Inc.*

Tear sheets of the article are being sent to you. For further information about electrostatic spraying, we refer you to Ransburg Electro-Coating Corp., Barth & Sanders, Indianapolis 7, Indiana.

Padding Lacquer

In June issue of *Industrial Finishing* there is an article entitled, "Leather Artistry" by Arthur Willis, in which he mentions the use of a padding lacquer. Is this lacquer he mentions "Qualasole"?

I note at the end of the article he mentions the use of a certain brand of padding lacquer, that may be brushed or sprayed, dries hard, rubs well, and resists 120 proof alcohol, and does not scratch white. Can this type of padding lacquer be used for the padding of furniture, as in french polishing? Would you furnish me the name of the product mentioned and the company from whom it could be secured?—*R. S. B.*

The advertisement on page 71 of that same issue answers part of your question. For further information we suggest that you write the firm named in the ad.—*Ed.*

Leak-Proof Faucet

In May 1950 issue of *Industrial Finishing* (page 92) we note that "G.S.Co." states they have trouble in keeping, in their thinner drums, faucets that will not leak. We believe we have the answer to their problem in the "Sette" self-closing faucet manufactured by the Marquart Mfg. Co., Oakland, Calif., for whom we are the New England representatives. We are

CONVEYOR LINE FINISHING

A Conveyor Line finishing operation can be an awful headache or a great blessing in time, labor and dollars saved. The headache comes from pinholes, blushing, stoppage and rejects by the hundreds.

Smoother, uninterrupted conveyor finishing schedules are developed from start to finish in the overall production program. The wood must be right, gluing operations, surface preparation, filling, staining, sealing and sanding all have to be integrated into a stop watch schedule without undue strain on any one operation.

Our technical men have had an unusual and diversified experience with conveyor line finishing production problems. They know what to look for and they know the right answers to most problems. They are expert trouble shooters whose experience is your assurance of prompt and satisfactory service.

Fast, modern conveyor line finishing operations require finishes that have been specially formulated to meet the exacting schedule of operations. If your percentage of rejects is too high or if your production schedule is not up to standard then you need the kind of finishes and service we offer.

It won't cost you anything to have our technical men survey and study your conveyor line finishing operation and it will probably save you considerable time, trouble and money. A phone call, a wire or letter will give you the details of the recommended procedure to work out and solve your particular problem.

OUR 75TH ANNIVERSARY YEAR

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

Manufacturers of

FILLERS—STAINS—VARNISHES—LACQUERS—SEALERS—PRIMERS AND SPECIAL FINISHES FOR CONVEYOR LINE PRODUCTION

7430 STATE ROAD **PHILADELPHIA 36, PA.**

very glad to send you a catalog sheet giving pertinent information on this faucet. — *Copley Sales Co., Boston, Mass.*

Fluorescent Paint

We have designed an ornament on which we are interested in using fluorescent paint so it will glow in a dark as well as a semi-dark or light room. Please direct us to the proper sources in obtaining this type of material.—*D. L. Mfg.*

In a letter we are naming several concerns that can supply what you want.—*Ed.*

Sticks to Galvanized Iron

In May 1950 issue, in the "Letters from Readers" section, page 94, we notice an answer to an inquiry on making paint stick to galvanized iron. Inasmuch as we have just recently completed a product for this purpose, we would appreciate being listed as a supplier.—*Atech, Inc.*

Chinese Type of Finish

We are cabinet manufacturers and are interested in finding out how to apply a Chinese type of finish to our cabinets. We have seen this treatment on the market and are interested in duplicating it. It consists generally of a white, black or red enamel background with raised gold Oriental figures.—*R. W. Co.*

We suggest that you read the article entitled, "Planning, Decorating and Finishing Fine Custom Made Furniture", published in January 1950 issue of this magazine, beginning on page 72.

This article will give you considerable information along the lines of applying Chinese decoration. As I recall it, this is about the only article taking up Chinese decoration which has been published during the past 20 years in *Industrial Finishing.—Ed.*

Flock and Tinsel Adhesives

In May issue, page 92, you mention having given the names of several concerns who can supply adhesives for use with flock. We want to secure adhesives for use in applying silver tinsel to wood parts and will appreciate your giving us the names of these adhesive manufacturers.—*W.H.*

Names supplied.—*Ed.*

"Styrene" Finishes

We are interested in the article on "Styrene" in May issue of *Industrial Finishing*, page 66, and would appreciate receiving further information on this item.—*A Metal Products.*

We are referring your letter to the author of the article.—*Ed.*

Waterproofing Sealer

We noticed in April 1950 issue, under "Random Comment on the Industrial Scene", a paragraph about a new liquid colorless silicone sealer (page 121) which seals concrete and other masonry against moisture and water seepage. We would appreciate your sending us the manufacturer's name and address.—*Gulf W. Co.*

It's Protection Products Mfg. Co., Kalamazoo, Mich.—*Ed.*

Lehwood Stains

Will you please advise the address of the Lehwood Corp.? You printed

Ransburg Electro-Static Spray Process

Saves Paint

- 40% - 50% - as much as 75%
over other spraying methods!

METAL CHAIR MANUFACTURER "Paint cost per chair is now less than half that of former hand spray methods."

BICYCLE LAMP MANUFACTURER "$1.20 worth of enamel, evenly and uniformly applied with Ransburg Electro-Static Spray, goes as far as $4.80 worth did with hand spraying."

WATER HEATER MANUFACTURER "Our paint costs were reduced 50 per cent after we installed the Ransburg process."

Investigate the many savings possible through the use of the Ransburg Electro-Spray Process. Write today for literature describing typical installations in your field.

RANSBURG

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

an article, sent in by them, in your April issue (pages 106-107) and we are interested in getting further information about the stains which they mentioned in their article.—*R. Furn.*

The firm's address is 1703 S. Ironwood Drive, South Bend 14, Ind.—*Ed.*

Tumble Finishing

Please send us a reprint of your article on "Tumble Finishing" which appeared in November 1949 issue.—C. Corp.

May we ask you to be kind enough to send us a reprint of the same article? — Manufatura de Brinquedos Estrela S/A, Sao Paulo, Brazil.

Please send us a reprint of . . . . We would be glad to pay . . .—W.M*fg.* Co. (Furniture Trimmings).

Reprints sent.—*Ed.*

Clear Vinyl Varnish

We would like to procure a clear vinyl varnish for applying a transparent protective film to our product. This varnish should be preferably suitable for dipping the product and airdrying. Any information you can give us on this subject will be appreciated.—*S. Co.*

In a letter we are submitting the names of several firms who can probably supply what you want.—*Ed.*

Tinted Finish for Plastic

We refer to the request by the "P. Co." (on page 84 of June issue) for a green dye to be combined with lacquer or other vehicles for decorating illuminating signs to be used on a molded acrylic surface. If this concern is interested in receiving lacquers already tinted to the desired colors, we offer our services.

We have furnished many plastic molding companies in the Chicago area with lacquers for plastic moldings which were used on exterior automotive emblems, a pre-requisite of which is light-fastness. We are certain that we can furnish a satisfactory finish for "P.Co.". Would you kindly forward our name to them?—*National Lacquer & Paint Co.*

In a letter we are identifying the concern that made the inquiry.—*Ed.*

Metal and Plastic Finishes

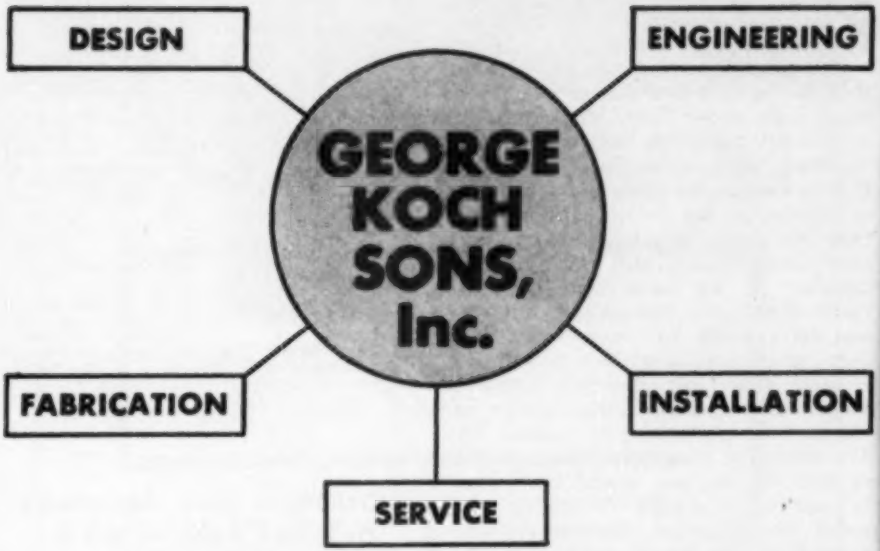
In June issue, "Letters from Readers", we refer in particular to the letter from "L.A. Inc.", (page 84) who is interested in obtaining information on etching materials. We are sending with this letter a bulletin on our Acid Resist Etching Blacks which would probably be of interest to these people.

Another letter signed "P.Co." (page 84) refers to a tinted finish for plastic. Our laboratories have recently developed a new transparent line, available in a complete set of colors, that have proven satisfactory to a great number of people who had the same problem that "P.Co." is having. We are sending you a bulletin describing our Transparent Silk Screen Materials, and we are certain that this is what they are looking for.—*Fred'k. A. Stresen-Reuter, Inc.*

Shellac Wash Coat

Now that our laboratory has relieved itself of a good deal of developmental work, which tied them up until recently, we are eager to look into a new development in lacquer under-

SINGLE RESPONSIBILITY



COMPLETE FINISHING SYSTEMS

With all elements of your complete finishing system placed fully in the hands of a single, competent organization, the result is complete satisfaction and continued dependable performance.

Let KOCH engineers appraise your finishing problems and make specific recommendations. No obligation.

Phone, Wire or Write Today!

GEORGE KOCH SONS, INC.

EVANSVILLE 4, INDIANA

coatings, as mentioned in the article written by Mr. Rollin H. Wampler, which appeared in March 1950 issue of *Industrial Finishing*. You may recall that he had an interesting 6-page article on New Developments in Wood Finishes in that issue.

He pointed out, what we believe, that the shellac has had no peer as a wash coat under filler, but today one or two new materials have been turned up that "make possible a washcoat that has all of the desirable properties of shellac". We have survived for over 100 years only by being alive to new developments and not ignoring trends. If we have something to learn about new competitive finishes, we don't want to sleep while our furniture business withers away.

Your New York office felt that you might know offhand the names of these raw materials mentioned by Mr. Wampler (page 68 of the article) or that, if not, you would know how to get hold of Mr. Wampler and could probably get the information from him. We would appreciate any information you could supply us on the subject.—*William Zinsser & Co.*

Your letter has been referred to Mr. Wampler.—*Ed.*

B. F. Ames of M. & W. Elected V. P. of Industrial Marketers

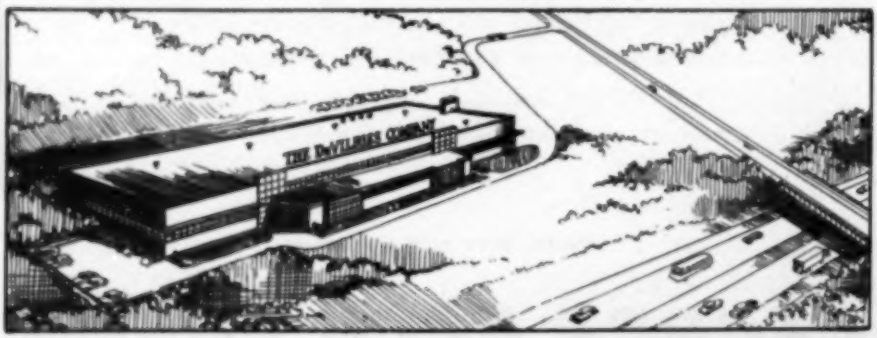
At a recent meeting of the Industrial Marketers of New Jersey, a chapter of the National Advertisers Association, Mr. Bertram F. Ames, who resides in South Orange, N. J., was elected to the position of Vice President.

Mr. Ames, at present, holds a position of General Sales Manager of Maas & Waldstein Co., Newark, Chicago, Los Angeles, manufacturers of lacquers, enamels and synthetic finishes.

He is an active member of the American Marketing Association, the Advertising Club of New Jersey, and the New York Paint, Varnish & Lacquer Association.

Fitzsimmons Now Represents Houghton Labs. in N.Y.C.

James L. Fitzsimmons, 34 Bellevue Ave., Belleville 9, N.J., has been appointed by the Houghton Laboratories, Inc., Olean, N.Y., manufacturer of industrial protective coating materials, as its direct factory sales and service representative in the metropolitan New York City area including adjoining New Jersey.



New plant to be built by the DeVilbiss Co. on the Pennsylvania Turnpike at Somerset, Penna., is expected to be in operation by November 1. The company manufactures air compressors, spray painting equipment, exhaust systems and hose. The main plant and offices are in Toledo, Ohio; sales-service branches are located in the larger cities.

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
Are You Looking for Production Finishes That Give You
HIGHER QUALITY?
SUPERIOR COVERAGE?
LOWER COSTS?
Then try New Period Quality Finishes. You'll find this complete line of Fillers and Stains, Lacquers — Clear and Semi-Gloss, Sealers, Lacquer Enamels—Flat and Gloss, and Synthetic Enamels fills the bill on all jobs no matter how tough.
Why Not Try New Period Production Finishes?
Write for 5-gallon working sample at drum price.
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
NEW YORK WOODFINISHERS' Supply Co.

Machines for Dipping and Drying Beads

We are interested in machinery mentioned and illustrated in the article in May issue of *Industrial Finishing* about "Pearl Lacquer Finishes on Simulated Pearls". We would like to know who makes the special dipping tanks or any dipping equipment, particularly for small objects—but not necessarily beads.

What we are interested in is the universal application of finishing material to all small types of wood turnings. We are not interested in the pearl essence, but only in dipped lacquers or dipped enamels. Also, any heating devices or whatever it may be that is used to aid or accelerate the drying. Also, equipment used to string beads mechanically, if there is such a device.

We presume some of this equipment has been specially designed by a few firms who specialize in it. If there is some source where we can have it made, we would like to know that. *If there is some mechanism or device to spray the finish on these small objects, we would like information on it too.—C. W. P. Co.*

For manual, semi-automatic or complete automatic equipment to spray lacquer or other finishing material, we recommend that you contact one or all of the manufacturers of spray equipment whose advertising you see in any copy of this magazine.

In regard to pearl dipping machines and rotary driers, we obtained the accompanying pictures and the following information from the manufacturer, Debra, Inc., 136 Liberty St., New York 6, N. Y.:

The picture of the single unit dipping machine (Fig. 1) shows strings of beads, on dipping board, being dipped into a pearl lacquer solution. This is the string-dip method. Clay dipping boards, holed wood boards, etc., with beads mounted on toothpicks, are dipped in the same manner (Toothpick-dipping). Operation is completely automatic, with the dipping speed being controlled at will . . .

The dipping unit is in a heavy-gauged steel box, which can be set on a table, or placed on legs. It handles two dipping boards 12x24-in.

The picture of the basic power

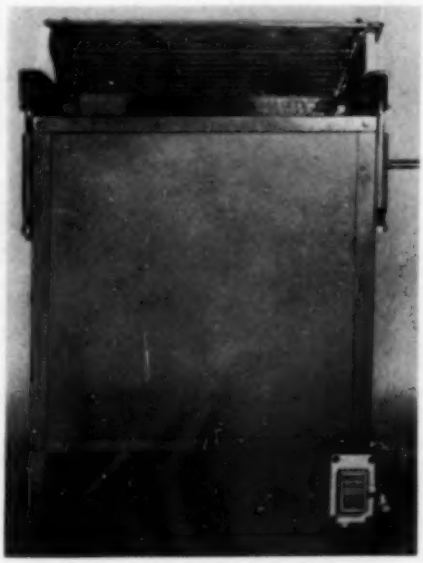
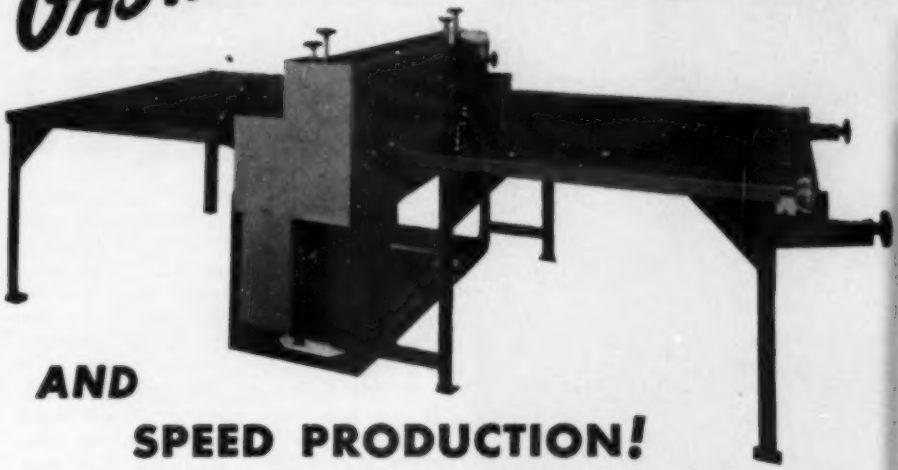


Fig. 1—Pearl dipping machine: single unit.

GASWAY ROLLACOAT FINISHERS CUT COATING COSTS



AND SPEED PRODUCTION!

The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and evenness of coat.

The applications for Rollacoating are numerous. Top, bottom and sides of practically any type of flat material, whether sheet or coil stock, can be coated by a single pass through the machine.

Special equipment for cleaning, treating, coating, drying, and rewinding strip in continuous process can be constructed to special order.

GASWAY CORPORATION

Write or wire today for the 12 page Gasway illustrated book describing Rollacoat Finishers, their possibilities and limitation.

6463 No. Ravenswood Ave.
Chicago 26, Illinois

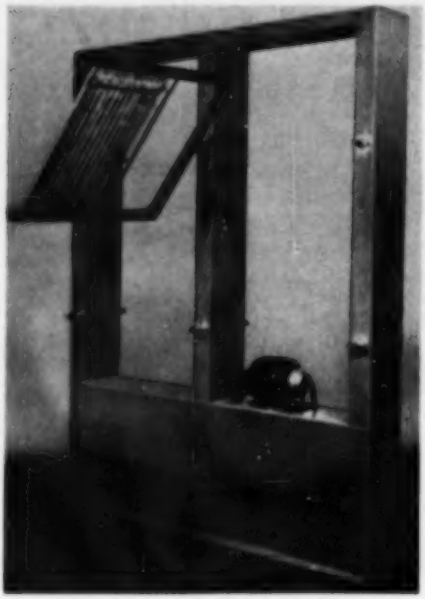


Fig. 2—Power driven rotary drier with only one partially filled rack of dipped beads in position. Other spindles on both sides of this upright unit are empty.

unit (Fig. 2) of the rotary drier, shows pearls on stringdip board being dried by rotation of one of the arms. The basic power unit has 12 arms with a capacity for rotating 48 dipping boards (12x24-in.) which is equivalent to at least 24 dozen necklaces. Additional drying sections can be added to the basic power unit, each with a capacity of 32 or 48 boards.

Rotary drying produces a uniform, even flow of pearl lacquer over the entire surface of the bead, preventing lacquer from dripping or accumulating on any one point, thus assuring a smooth, uniform, lustrous pearl finish.—*W.R.*

Keep all old copies of Industrial Finishing for further reference. The publisher cannot supply back copies.

Gasket-Dip Coating Wood Handles

One of our good friends in the handle coating industry is inquiring if we can give them any particulars regarding the construction of a "gasket coating machine" that would be suitable for the automatic coating of wooden bottle opener handles which are approximately 4-in. long and ¾-in. in diameter.

These handles are currently being dipped with a solid covering coat, and are then imprinted with advertising and finally coated with a clear lacquer. What the manufacturer has in mind is to apply the clear lacquer itself as the final operation, through a gasket coating machine.

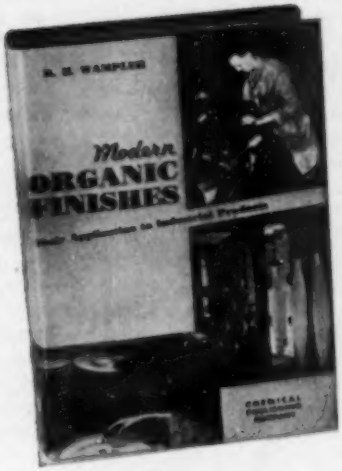
Would appreciate hearing from you if you have any particulars on hand as to a type of gasket coating machine that could be used for this work, or failing that, if you could supply us with the name or names of manufacturers of this type of equipment.—*I. C. Co.*

The few gasket-type coating machines that we have seen or heard of are homemade and hand-operated, the operator dipping and withdrawing one handle at a time. An automatic multiple machine could be made but we do not know of any such machine, nor do we know of any concern that might be interested in designing and building such a machine.

The accompanying picture shows a workman dipping and withdrawing broom handles from a single gasket-type coater—a home made device which is in use in a broom handle factory. [*See page 92*]

The "tank" is a sheet metal tube 3-in. in diameter, closed at the bottom and having a 16-in. funnel welded to the top open end. Above the funnel a rubber squeegee is clamped between metal washers. [*Cont'd page 92*]

A "MUST" For All Finishers!



MODERN ORGANIC FINISHES

"Their application to Industrial Products"

This book contains 432 pages of the latest information on finishing. It describes modern finishing materials and equipment for their application, drying, conveying, etc., so that the reader may have an overall picture of modern industrial applications. Throughout, the main emphasis is on proper selection and use of materials to get the best possible finish at minimum cost.

It's Complete — Note the Contents

MATERIALS: Oleoresinous and Alkyd Varnishes and Enamels; Cellulose Lacquers; Spirit Varnishes, High Integrity and Specialty Finishes; Stains, Wood and Metal Fillers, and Miscellaneous Finishing Materials.

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Conveying Methods.

FINISHING PROCESSES:

Wooden Furniture and Cabinet Finishing; Prefinishing Wood, Plywood and Hardboard Structural Materials; Special Industrial Wood Finishing Problems; Finishing Paper, Cardboard and Fabrics, Finishing Plastics and Resin-Impregnated Wood; Cleaning and Surface-Treating Metals; Finishing Automotive and Railway Equipment; Finishing Sheet Steel Products; Finishing Iron Castings; Finishing Aircraft; Rubbing and Polishing Organic Finishes.

SOME GENERAL CONSIDERATIONS:

Good Practice in the Finishing Department; Testing and Evaluating Finishes.

The price is $8.50 and to eliminate bookkeeping we ask that cash accompany order. Sold on a money-back guarantee. Money refunded promptly and without any questions if you are not satisfied.

INDUSTRIAL FINISHING Magazine

1142 North Meridian Street **Indianapolis 4, Ind.**

The squeegee is a strip of rubber as thick as that used for the inner tubes of automobile tires. They use a strip of rubber about 5-in. wide and 30-in. long, and *punch clean round holes in the rubber* on 4-in. centers. These holes must be smaller than the diameter of the handle to be coated. For example, for a ⅝-in. diameter handle, a 5/16-in hole; for the 1-in. handle, a ¾-in. or ½-in. hole is required; and for a 1¼-in. handle a 9/16-in. hole is necessary to properly wipe off the excess coating material.

He dips only one handle at a time.

Where this device is in service they use strips of rubber about 30-in. long so that eight or ten holes can be punched in one strip. Then, as one hole becomes worn or clogged with lacquer, the operator loosens the wing nuts and moves the squeegee forward to a clean hole. At the end of each dipping job, the rubber squeegee is washed in lacquer thinner.

Broom handles are given two coats of dipping lacquer. For the first coat, the lacquer is used as it comes from the container. Handles are dipped and racked to air dry for an hour; then they are again dipped into the lacquer with a small amount of thinner added. Better results are obtained by applying a thinned second coat. After the last coat air dries for two hours, the handles are ready to be assembled into brooms.

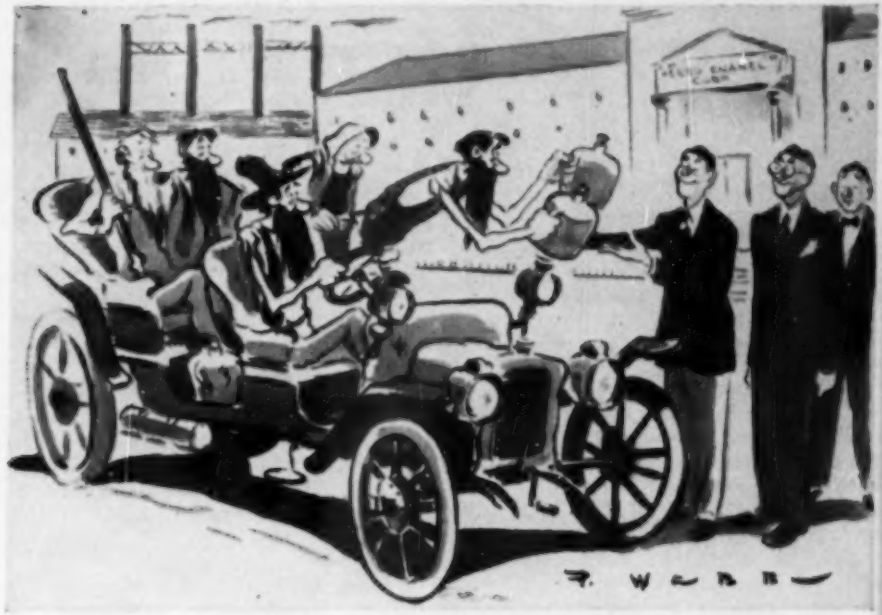
One operator, working a full 8-hour day, can dip 3000 handles 1-in. in diameter on the first coat, or 2000 of the same handles on the second coat. On the ⅝-in. handles he can do 1000 more than the above figures; on the 1¼-in. handles he will do 500 less.—*Ed.*

Tumbling Process Bulletins Free

Lupomatic Industries, Inc., 4510 Bullard Ave., New York 66, N. Y., manufacturer of the Tumb-L-Matic line of equipment, compounds and supplies, has just issued two new illustrated bulletins that give complete specifications on two types of Tumb-L-Matic tumbling barrels.

G. L. Nankervis & Electro-M. Devices Co. Consolidate

The George L. Nankervis Co., internationally accepted engineers and manufacturers of plating, buffing, and metal finishing equipment, announces the purchase of the Electro-Mechanical Devices Co. of Detroit, as a wholly owned subsidiary. Electro-Mechanical Devices Co. (EMDCO) designs and builds dynamometers, control panels, test stands and special machinery and products to serve the needs of the automotive and aircraft industries for production and quality control equipment.



"Paw thought it would be nice ef we drove up an' showed our appreciation of yore wunderful new HAMMEROC finish"

We've been getting compliments by the carload on this new, easy-to-use, one coat hammered-effect finish. No splatter coat of thinner or special spray gun is required for application and the final result rivals in beauty the finest work of ancient craftsmen. Hammeroc holds a uniform pattern, provides excellent coverage, has superior hiding properties. We'd like to know what you think of it. Write today; samples and quotations will be sent you promptly.

Remember, Ferro Is Set Up to Provide Complete Organic Coatings Service. From the Development of Specialized Coatings to Designing and Installing Efficient Finishing Oven Systems.

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LIQUID PLASTICS DIVISION
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Vedoc

Dulac Clear Lacquer D-129

Dulac Clear Lacquer D-129 is a water-white clear lacquer made especially for use on aluminum window frames. These frames, once coated with Dulac Clear Lacquer D-129, have shown no evidence of finish failure or "lime burn" after 30 days contact with lime mortar at 100% humidity at room temperature.

This finish is resistant to alkali, moisture, alcohol, greases and many other chemicals.

The coating, once it is cured, may be subjected to temperatures up to 500° F. with no evidence of discoloration. It can be used satisfactorily on practically all metals; dries out of dust in 5 to 10 minutes; is hard in one hour. A product of Maas & Waldstein Co., 438 Riverside Ave., Newark 4, New Jersey.

One-Coat Hammer-Effect Finish for Metal

A new one-coat hammer-effect finish, known as Un-i-loid, which may be sprayed on metal items at the same pressure as regular enamels, has been perfected by the United Lacquer Mfg. Corp., of Linden, N.J., and Everett, Mass.

Research which produced Un-i-loid was begun when manufacturers complained that the hammer effect obtained with previously available finishes varied with the techniques used by different sprayers.

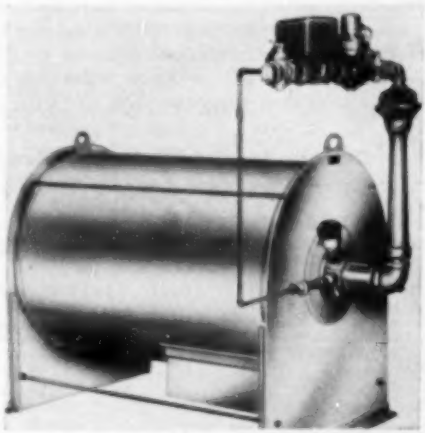
This difficulty has been overcome by Un-i-loid, United chemists report. One coat of the new enamel, when sprayed at standard enamel pressure, immediately produces a hammer effect with a smooth, lustrous appearance. Excellent results have been obtained, they say, in extensive tests on oil burners, refrigeration equipment, sanitary containers and other metal items.

Un-i-loid is available in a full range of colors, and in either a bake or an air-dry finish.

Baking time is 300° F. for 20 minutes in a gas oven, or eight minutes under infra-red lights. Air dry Un-i-loid is dust-free within a few minutes and can be handled within an hour. It will dry hard overnight.

New Gehnrich Air Heater

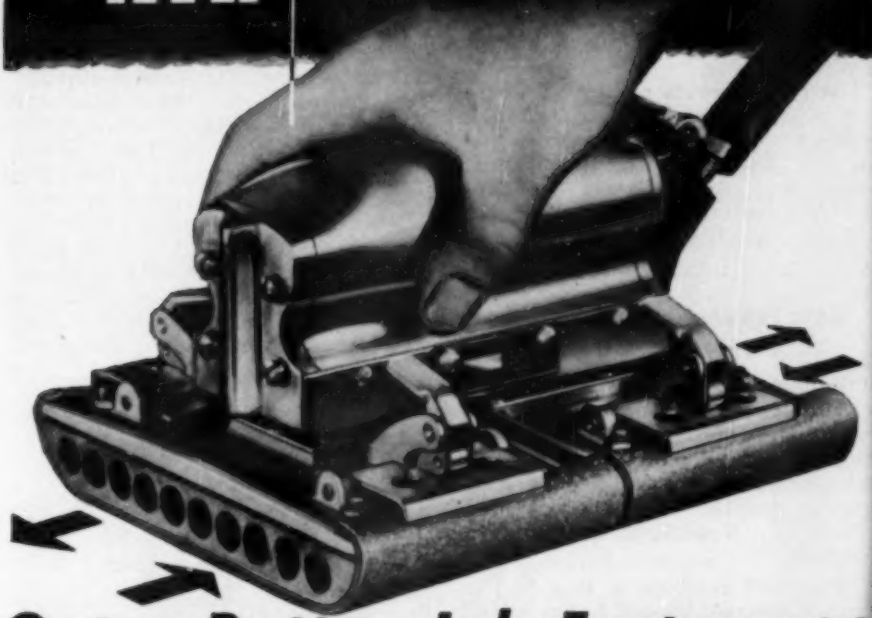
For industrial ovens and dryers, the Gehnrich Atmospheric Gas-Fired Air Heater provides uniform forced circulation of heated air for opera-



In six capacities; Factory Mutual approved.

SAND BY AIR

IN STRAIGHT LINES...



Get a Better Job Faster with this Sundstrand Opposed Pad Sander

● Here's your sander for production or maintenance work on wood, metal, plastic or composition. It's a sturdy air operated machine — easy to handle because of vibration-free action.

You'll save 50% to 70% on production sanding — wet or dry.

Pads reciprocate in a straight line and in opposite directions — grain structure can be followed easily, producing finer final finish.

If your work includes sanding of wood, metal or composition on production or maintenance work, write for free complete bulletins. Ask for bulletin IF-55.

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC MACHINE DIVISION
ROCKFORD, ILLINOIS, U.S.A.

tions to 600° F. This Air Heater not only permits existing units using other fuels, to be readily converted to gas firing, but greatly improves the efficiency of those ovens and dryers already heated by internal gas burners. Recirculation of heated air in the manner provided by the Gehnrich air heater allows rapid and uniform convection heating, accurate control of oven ventilation and complete safety of operation.

The air heater is applicable wherever drying or baking is accomplished by hot air circulation . . . . for example, the baking of japan, enamel, lacquer and paint finishes. For further information, write W. S. Rockwell Co., 200 Eliot St., Fairfield, Conn.

Rust Preventing and Metal Treating Oil

"Peroline" is an oil-like chemical for producing an oiled phosphate coating on iron and steel products that are later to be painted, to prevent these products from rusting in storage or transit. Three grades of "Peroline", Nos. 1, 2 and 3, are available.

"Peroline" develops a thin oil-like coating securely bonded to the metal. It prevents rust from developing under the oil film by reacting chemically with the metal to remove traces of rust, eradicate handmarks and to destroy other visible or invisible rust stimulatea.

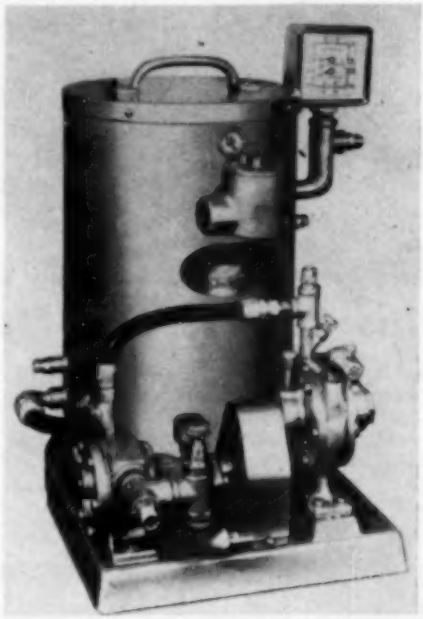
In preparing "Peroline" coated work for painting it is necessary only to remove the oil phase by vapor degreasing or with suitable petroleum or coal-tar solvents, being careful to avoid marring the conditioned surface with handmarks. In spite of the very thin film produced, "Peroline" is extremely effective in preventing rust. It is a product of American Chemical Paint Co., Ambler, Penna.

Bede "Blowback" Flushes Paint Lines

With the new Bede Blowback Attachment, color changes and flushing of paint lines take only a fraction of the time formerly required. The new Blowback Attachment, easily installed on any Bede Circulating Paint Heater, diverts compressed air to blow out paint lines. This new attachment is manufactured by Bede Products, Inc., 4311 Ridge Road, Cleveland 9, Ohio.

All unused finish in the system, usually flushed out with solvent and wasted, is returned to the original container or paint supply. Often the cleaning out is accomplished so thoroughly that it is unnecessary to follow up with flushing out the hose with solvent. Any slight traces of paint remaining can be removed with the first few sprays of the next color run.

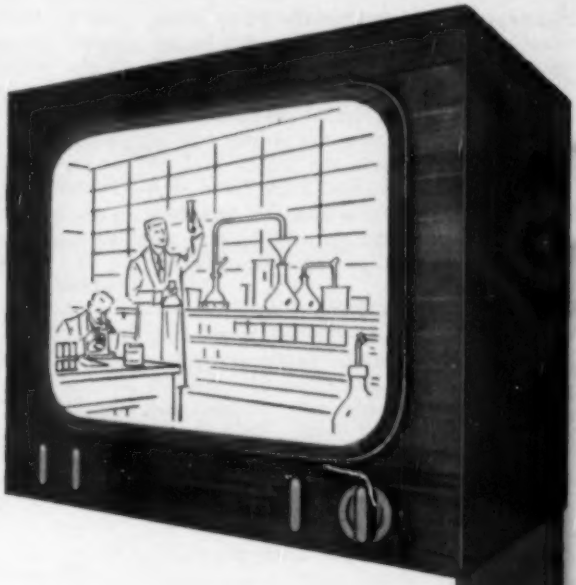
Operation is simple and foolproof.



Bede circulating paint heater with "Blowback" attachment.

[*Cont'd on page 98*]

AS MODERN AS TELEVISION



Gilbert Spruance finishes are kept as modern as television itself — through constant researching, testing and experimentation—in our modern, fully equipped laboratory.

If you have a television set the chances are that the cabinet was finished with Gilbert Spruance stains — fillers — undercoats and lacquers noted for quality, beauty and durability.

If there's a wood finish you wish you had — dreamed about — or just imagined — if there's one you want improved — changed or developed — we invite you to avail yourself of our experience and willingness to work on it for you.

THE GILBERT SPRUANCE COMPANY

PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

Compressed air flushes the paint lines. One valve on the inlet side of the air motor (at right of picture) shuts off the air motor and pump. Opening a second valve (at left) permits compressed air to force the paint out of the pump, through the Paint Heater and the fluid hoses back into the original container. Thus, the complete system is emptied of paint, and all paint is returned to the container for future use.

Addition of a Bede Blowback Attachment makes the Bede Circulating Paint Heater more versatile and practical. Paint can be drawn direct from original paint containers without the use of a pressure tank. The explosion-proof Bede Heater heats the paint to any desired temperature, generally to 180° F., to obtain better quality paint films with fewer rejects and to cut the cost of paint, thinner and labor.

The Bede Paint Heater has been tested and passed by Underwriters' Laboratories, and has been proved completely explosion-proof. One unique feature is that aluminum is used as the heat transfer agent, eliminating heat transfer liquids which can decompose under heat, or water, which can deposit lime in the tank or leak. The heater comes up to operating temperature within 15 minutes, and requires no attention once it's started.

Prevents "Solvent Wash" in Metal Cabinet Finishing

A new formulating technique which eliminates the problem of "solvent wash" from baking finishes used on metal cabinets and similar metal articles has been developed by the Finishes Laboratories of Standard Varnish Works, 2600 Richmond Terrace, Staten Island 3, N.Y., it was announced here by Mr. Carl Bauer, Industrial Sales Manager.

"Virtually every manufacturer of metal cabinets, metal containers, or metal furniture is troubled with 'solvent wash', a condition in which sharp corners and parts adjacent to edges or perforations are incompletely coated," the announcement said. "This difficulty arises from the solvent action of the thinner in the coating and from inadequate ventilation in the finishing system itself."

Mr. Bauer concluded that the new Standard process coupled with any of the company's baking enamel formulations will result in the elimination of the costly rejections and refinishing attendant to "solvent wash" and its effects.

Specific problems should be referred to Industrial Finishes Division, Standard Varnish Works, 2600 Richmond Terrace, Staten Island 3, New York.

Clear Plastic Coating Sprays Direct From Container

Aluminum Industries, Inc., Cincinnati 25, Ohio, manufacturer of Permite Ready-Mixed Aluminum Paints

Saving TENS OF MILLIONS OF MAN HOURS ANNUALLY

During a quarter of a century Balsa has designed, engineered, manufactured and installed over 3,000 conveyor systems in the furniture and television industry. These conveyors are saving the industry many tens of millions of man hours annually as indicated by the statements published below.

"The plant systematizing and conveyorization of your system in our plant has not only drastically reduced manufacturing plant labor way beyond our expectations, but has increased our production in excess of two hundred percent and in addition, reduced our material expenditures and given us definite control of scheduling volume. We wish to express our highest regards for your own personal engineering achievements, not only in developing, designing and supervising the installation of the new system, but your ability to personally direct our plant personnel in new methods necessary for mass production over the new mechanical system."—JOSEPH L. MELLISH, *President,* J. K. Rishel Furniture Co., Williamsport, Penna.

"The conveyor system you installed is the finest installation we ever made in our plant. We are very proud of it. We have already made substantial savings in labor. . . . Former number of cabinet employees 47; present number 31. Former number of finishing employees 30; present number 13. Finishing Dept. production increased from 150 pieces per day to 400 pieces per day (case goods). Our personnel like to work on the system because it has made their work easier. . . . We have better control of production. This system has a lot of possibilities for increasing production, and at the same time improving the quality of the finish. We have no hesitancy to recommend your system to any manufacturer who wants economical production of furniture."—FID. E. ALAIN, *Vice President & Assistant Manager,* Victoriaville Furniture Ltd., Victoriaville, P. Q., Canada.

Development Engineers and Designers of Original Furniture Conveyor Installations

BALSA, Inc.

122 EAST 42nd STREET, NEW YORK, N. Y.

and Permite Varnishes, is now marketing a new specialty product known as "Spra-Plast", which is packaged in a handy, 12-oz. "aerosol" type spray can. To apply, it is only necessary to press the valve button on top of the can—and a clear, plastic finish is sprayed on the article in a thin, even coat.

"Spra-Plast" is a high-gloss, washable, plastic coating for interior or exterior use over any type of surface, such as wood, metal, leather, canvas, parchment, linoleum, etc. It is transparent, flexible, and can be used to protect documents, art work, photographs, etc.; will not discolor; dries in 20 minutes; will not crack due to vibration.

Cooling Unit for Compressed Air

For those who use small quantities of compressed air but who must have it delivered to use cool and dry, Jas. A. Murphy & Co., Inc., Hamilton, O., has made available a line of small vertical aftercoolers. The line comprises two sizes. The smaller size measures 30-in. overall. The larger size measures 48-in. overall.

The unit is made up of an outer steel shell of correct size for the required capacity, which encloses a tube nest through which the cooling water passes. Hot air entering the cooling chamber is guided slowly about these cooling tubes from the intake at the bottom left to the outlet at the top center. Separated moisture drops by gravity to the trap below the bottom head, from which it is ejected as collected. Water inlet is shown on the photograph at the lower right of the unit, and water outlet, with sight-drip connection is shown at top right.

Wipe-on Method for Stamped, Engraved and Etched Parts

"Lacquer-Stik" is a semi-solidified paint in handy stick form, developed and compounded especially for wipe-ons or fill-ins of stamped, engraved or etched markings and designs on all types of smooth surface materials—plastics, metals, glass, ceramcs, etc. Rub the stick over the impression and wipe off the surface residue. The filled-in markings stand out clearly and distinctly at once and the part can be handled immediately without smearing.

The imbedded paint hardens quickly and soon becomes permanent. Its chemical composition is such that it expands and contracts with temperature changes of the part, therefore it cannot loosen or fall out. It is remarkably impervious to heat, and filled-in engraved parts can be subjected to temperatures as high as 500° F. without change in composition or holding properties.

The chemical manufacturer of Lacquer-Stik, Lake Chemical Co., 3052 W. Carroll Ave., Chicago 12, Ill., supplies this special paint in eight different colors and will send samples upon request. There are, however, so many different depths, line widths and types of engravings that the company prefers to receive a

For filling in etched lettering and designs.

Industrial Style Note:

The Best-Dressed Pneumatic Tube Cylinders are wearing Flock!

These active, inter-departmental shells whirl their way thru air pressured tubes — get tossed around, bumped and shunted. For that reason, the manufacturer thoughtfully took the precaution to spray the outer surfaces with a deep-pile, protective, all-over cushion of Claremont Flock!

Result:—A long-wearing jacket covering . . . lightweight—inexpensive. Choice of colors permits departmental identification. A fitting improvement — and one that is indicative of the good that Flock is doing industry-wide.

Flock processing by Suedo Finishing Co. New York City

INQUIRIES INVITED

• Claremont Flock is available in bulk in colors, in quantity for special spraying-on finishing purposes. Write for samples, color charts, prices.

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

sample part from those interested in its products. Its Research Department will then make written recommendations as to the color and type best suited for this particular requirement and will supply an individual report with the return of the sample and the recommended Lacquer-Stik.

Plastrip Strippable Coating for Metal Protection

Plastrip Strippable Coatings are solutions of modified vinyl-plastic resins designed to serve as barrier films against mechanical or chemical attack on polished metal surfaces such as aluminum, stainless steel, monel, magnesium, etc. Plastrip is being used to prevent injury of the surfaces during forming, storing, assembly or installation of the part. These films are tough and flexible. The high resistance to abrasion makes it possible to pre-polish an entire sheet of metal before fabrication and to eliminate delicate handling of metal parts in the factory.

This material is a product of Protective Treatments, Inc., 420 Dellrose Ave., Dayton 3, Ohio.

Air & Water Rinse Gun

The technical equipment division of Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif., manufacturer of industrial cleaning compounds, recently revealed details of its new air and water rinse gun.

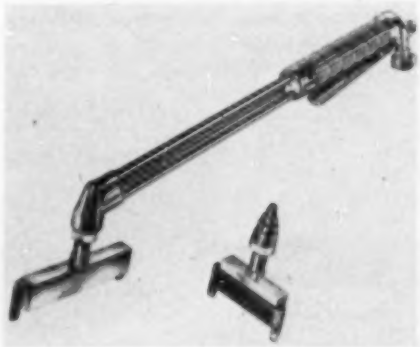
The air and water systems are controlled separately of each other. With this new feature, the operator can adjust either air or water spray to the most exacting degree.

Called the "Air and Water Rinser", the new gun uses hot or cold water, connects to a regular air and water supply, has a built-in hang-up hook, is engineered to eliminate troublesome back-splash. Built to comfortably fit the operator's hand, the new gun makes difficult rinsing easy, almost effortless. The heaviest dirt and grease can be blasted from even the finest finish, safely and swiftly.

The rinser is recommended for use in rinsing after application of emulsion precleaners, degreasing solutions, paint strippers and other cleaning materials. It is adaptable to cleaning industrial equipment, paint spray booths, aircraft and aircraft equipment, automotive equipment and a wide range of cleaning operations.

Burns-off Paint Quickly

A new paint removing burner which removes paint from metal faster and more thoroughly, is announced by National Cylinder Gas Co., 840 N. Michigan Ave., Chicago 11, Ill. It also removes scale and rust and dehydrates



For fast removal of paint from metal.

the metal surface, leaving a clean surface for repainting.

The burner uses a new principle in which an oxy-acetylene flame is supplemented by a low-velocity of pure oxygen, resulting in rapid oxidation of the heated paint. The burner is

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1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

designed to be attached to NCG's Torchweld "75" hand cutting torch and the entire unit is light and easily handled. Replaceable wear-resistant guide shoes maintain correct distancing of the burner from the metal surface.

The new burner gives clean surfaces, fast speed and low gas consumption. Speed on an average painted surface is estimated at 600-sq. ft. per hour using a 4-in. burner.

Synthetic Liquid Coating Protects Metal Surfaces

Krome-Kote Co., Hyde Park Bank Bldg., Chicago 15, Ill., announces a new synthetic liquid plastic coating which protects metal surfaces against rust, corrosion, pitting and tarnish. Called "Krome-Kote", this clear liquid plastic protects and beautifies metal and chromium of automobile parts. It is easy to apply; may be sprayed, brushed or wiped on; and once it is applied it will not oxidize, break down or powder off.

Anti-Skinning Agents for Paints and Varnishes

Two new anti-skinning agents for paints and varnishes are announced by the Naval Stores Division of the Glidden Company.

Supplementing Guai-A-Phene, Glidden anti-skinning agent which has been on the market for several years, the two new agents are Glidcol-Regular and Glidcol-WW.

Described as the "Three Guardsmen" of the paint world, the family of anti-skinning agents is prepared to serve every purpose where skinning is a problem.

All three Glidden anti-skinning agents are complex organic compounds including wood phenols. Users are cautioned that it is necessary to decide on the basis of tests the correct proportion of the agents best suited for particular formulation.

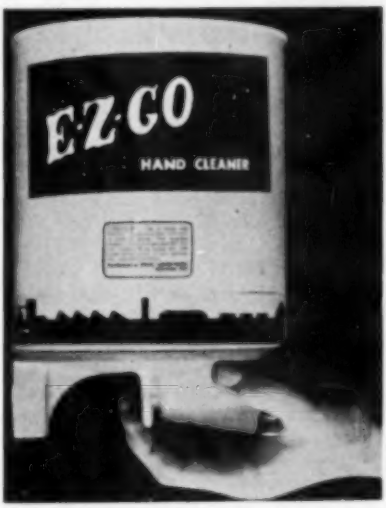
For the first time, Glidden Research Laboratories have developed a quantitative method of measuring anti-skinning effectiveness. This means that every shipment of these products will be checked for anti-skinning effectiveness by The Glidden Company at the point of manufacture.

Glidden anti-skinning agents are sold exclusively by E. W. Colledge, General Sales Agent, Inc., of Jacksonville, Fla., New York City, Cleveland, Chicago and San Francisco.

Hand Cleaner and Dispenser

Amaza Laboratories, Box 4114, Cleveland 23, Ohio, has developed a new, scientific, antiseptic, "snow-white", industrial Di-Phase Hand Cleaner that thoroughly removes industrial hand soil, with or without water, and a new industrial dispenser to dispense E-Z-Go Hand Cleaner for use in factories, schools, garages, shops, etc.

The E-Z-Go Di-Phase Cream Hand



Wall dispenser holds 6¾-lbs. of cleaner.

BE FRESH!
STAY FRESH!

for Dust Protection
wear a **DUPOR No. 4**

The ideal twin filter respirator to keep sawdust, silica dust, grinding compounds out of nose—throat—lungs! A favorite protection for paint spray, fumes, gases, vapors, etc. Rubber face mask provides airtight fit, controlled breathing, panorama view, no blind spots.

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Sample sent $1.65 *pp*

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Yes, now you can actually flush off the old finish from any metal surface! . . . Apply IMPERIAL RINSABLE REMOVER with a brush, and the toughest finish quickly becomes a soft mass, easily hosed away!

Penetrates paint, lacquer, zinc chromate, even baked enamel! Heavy bodied, it won't run on upright surfaces. Harmless to brushes. And it's NON-INFLAMMABLE. May be removed with steel wool or putty knife, if desired. Needs NO WASH-UP. Just be sure surface is dry before refinishing. Small metal objects quickly shed finish when immersed in Water Rinsable Remover and rinsed with water. Safe on all commonly used metals.

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from.....

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Company.....

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City.....State.....

Cleaner is a laboratory-tested and approved compound, containing scientifically formulated chemicals, including "Hand-Sept" (special antiseptics) and Lanolin. It contains no ammonia, alkaline salts, or abrasives. E-Z-Go discourages dermatitis, soothes and aids chapped hands, cuts and also scratches.

Corrosion Resistant Coatings

Series V-200 coatings, announced by Specialty Coatings Laboratory, 1721 N. Water St., Milwaukee 2, Wisc., are composed of a blend of vinyl polymers, producing an exceptionally tough and flexible air-dry coating which develops a high degree of adhesion to polished metal surfaces without the need of a primer. These coatings have excellent chemical resistance.

The material is easily applied by spraying or dipping; is applicable to metal or wood; air dries to touch in about 30 minutes; adaptable to high speed baking cycles; and the dried-out coating is non-toxic and does not impart odor or taste. These coatings are available in several colors.

Clear Wax Finish on Metal Prevents Rust

A new coating that provides unusual protection against rust and corrosion for metal surfaces has been developed by S. C. Johnson & Son, Inc. (makers of Johnson's Wax) Racine, Wisc.

This new wax gives aluminum, steel, brass, and other ferrous and non-ferrous metals a dry coating that is resistant to salt spray, high humidity and hazards of outdoor exposure.

Aluminum window frames treated with the new wax were undamaged after more than 300 hours in a 20% salt spray test conducted in com-

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NON-INFLAMMABLE « *wax free* REMOVER »

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I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D. — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

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pliance with strict American Society of Testing Materials requirements.

Low carbon steel panels coated with the special wax showed no rust after being exposed to 100% relative humidity at 100° F. for 300 hours, and in an exposure test the wax gave adequate protection to steel after five weeks in outdoor, winter weather.

In addition to its unusual protective property, the wax dries tack free in less than ten minutes after application.

It is easy to apply by the conventional dip, brush, wipe or spray methods and, when dry, it leaves a transparent film on the metal. The wax is not removed through handling or contact with packing materials.

The wax can be used on any metals to which shellacs or varnishes are now applied; it does not discolor in time or become brittle or chip several months after it is applied. At the same time the wax is not gummy, sticky or greasy.

If for any reason it becomes necessary to remove the wax, it is easily wiped off with ordinary solvents, including mineral spirits.

Turco's Fast Metal Cleaning 1620 Process

The Turco 1620 Process, a recent development of Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif., simplifies acid spray or immersion washing and surface conditioning of ferrous and nonferrous metals prior to painting. The new process offers economy and simplicity of solution control. Any existing spray washing setup of three or more stages ordinarily can be used without modification of established equipment or production lines.

Employing Turco 1620, a new acid-type cleaner, the Turco 1620 Process performs three operations simultaneously. It removes soil and dirt without use of additives, often eliminating precleaning; it provides a firm paint bond; and it inhibits rusting, usually eliminating the final chromic acid rinse.

New Read-At-A-Glance Hygrodial

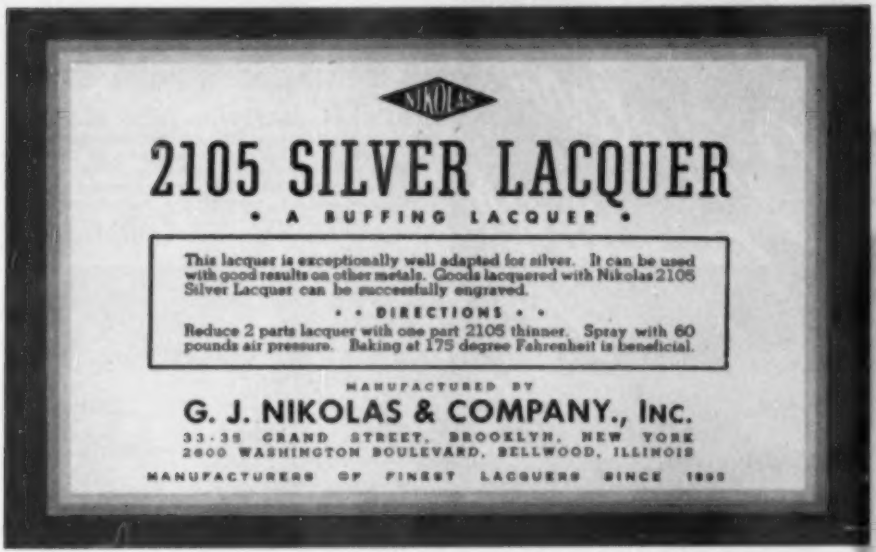
The Abbeon Supply Co., 58-10 41st Drive, Woodside, New York City, announces a new direct reading humidity and temperature indicator called the "Hygrodial."

The Hygrodial is a direct reading instrument which shows at a glance the relative humidity and temperature of the air to which it is exposed. The humidity scale is graduated into 10 equal divisions from 0 to 100% over an area of 2½-in. and is clearly marked. This new indicator is highly accurate and maintains its calibration.

Shows humidity and temperature readings.

The thermometer is a red liquid filled, lens front type and is accurate within 1° at 70° F.

Both sets of numerals are satin-finished aluminum on an etched black background. This affords a clear quick reading. Slots on each side and the bottom afford maximum ventilation for quick sensing by the motivating element.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2105 SILVER LACQUER
• A BUFFING LACQUER •
This lacquer is exceptionally well adapted for silver. It can be used with good results on other metals. Goods lacquered with Nikolas 2105 Silver Lacquer can be successfully engraved.
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Reduce 2 parts lacquer with one part 2105 thinner. Spray with 60 pounds air pressure. Baking at 175 degree Fahrenheit is beneficial.
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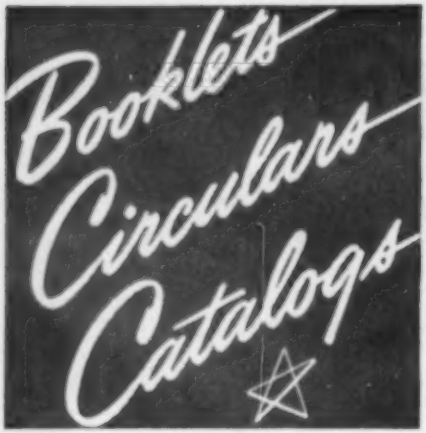


A. A. Phosphates Bulletin

Physical properties, solvent compatibility and suggested uses for Monsanto Chemical Co.'s alkyl alkali and alkyl acid phosphates are contained in two companion technical bulletins now available. Monsanto is in St. Louis, Mo.

Plaskon 3187

A demand of the paint industry for a medium soya oil alkyd solution at a higher viscosity range has resulted in the commercial development of such a resin by the Plaskon Division of Libbey-Owens-Ford Glass Co. The new resin has been designated Plaskon 3187 and is intended primarily for use in architectural finishes, porch and deck paint and industrial primers and finishes. It is chemically identical to Plaskon 3185 but is bodied to a higher viscosity.

How to Strip Paints

An interesting account of materials and procedures designed to simplify the removal of oil-base and synthetic paints, enamels, and similar finishes from metal surfaces is provided in an illustrated, 14-page booklet just published by Oakite Products, Inc., 132F Thames St., New York 6, N.Y.

The booklet discusses specific paint-stripping materials and describes four simplified methods of removing paint from surfaces. These are: 1) the hot flow-on method, where surfaces are flooded with hot solutions of stripping compound to remove paint from large areas or parts too big for immersion stripping; 2) the cold-spray method, where pressurized cold solutions are employed to strip paint from large parts when equipment or facilities are limited; 3) the steam gun method, where paint is blasted off surfaces by the rapid, combined action of steam and stripping compound; and 4) the tank immersion method, for effective stripping of rejected parts in mass production operations to prepare them for resurfacing.

Also discussed briefly in the booklet are specialized materials for surface preparation of parts before repainting to promote improved paint adhesion, and materials for efficient and anti-rust protection of stripped rejects awaiting repainting. Readers desiring free copies of this new booklet may obtain them by writing Oakite.

F. & L. Mid-Year Calendar

An attractive and colorful, lithographed calendar was recently issued by Fuchs & Lang Mfg. Co., Division of Sun Chemical Corp. According to E. G. Schreibeis, F&L's General Manager, this 12-page calendar does more than tell the date. It offers a practical demonstration of how you can get 3-color quality at 2-color cost when you select F&L press-tested inks in colors which have the proper relationship.

New RLM Specifications Booklet

A newly-revised edition of the RLM Specifications Booklet, containing four officially-approved new specifications, as well as important revisions of existing RLM Specifications, has just been issued by the RLM Standards Institute, Chicago, Ill. Entitled "RLM Standard Specifications for Industrial Lighting Units", this 44-page booklet contains detailed specifications for 18 different fluorescent and incandescent industrial lighting units which carry the RLM Label. It is available without charge.

Free Booklet on Air Power

A new 18-page booklet containing extensive basic reference data on compressed air and gas power is offered free by the Compressed Air & Gas Institute, 1410 Terminal Tower, Cleveland, Ohio.

Designed as a general non-technical review of the application of compressed air and gas theory to actual machines and uses, this booklet will be of value to all branches of engineering.

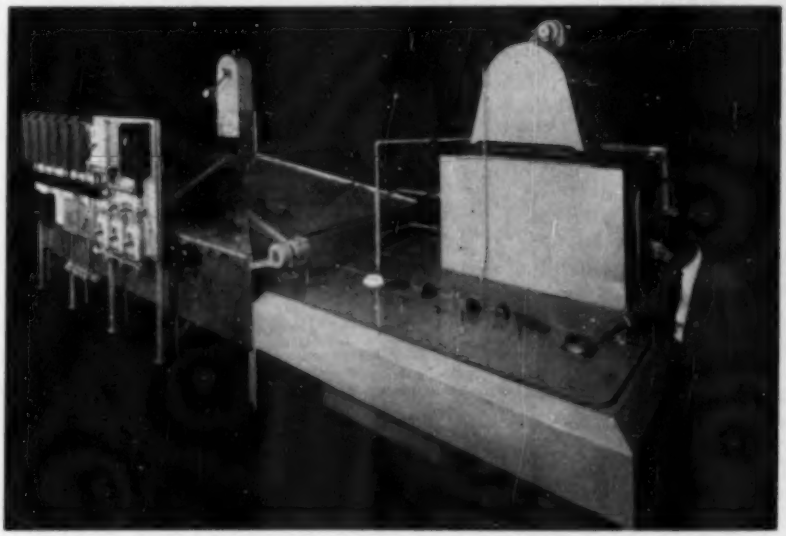
It outlines how air is compressed, the machines employed in compressing air and gas, and the basic principles of the utilization of air power.

Steam Cleaner Operation

The DuBois Co. of Cincinnati 3, Ohio, has just published a 12-page booklet on the operation and maintenance of steam cleaners. The booklet contains general information on the steam cleaner and a

REDUCE FINISHING COSTS

By using CAPITOL ELECTRIC SPRAY BAKE EQUIPMENT for high quality, fast production of parts up to 10-in. diameter with regular or irregular shapes. Prominent manufacturers of clocks, automotive parts, hardware, compacts, pens, pencils, lipsticks, etc., are among the many satisfied users of Capitol Machines, Models B, C and D, one of which is shown below.



Shown on working bed of machine are: CLOCK CASING, PENCILS, TOY TRAIN, MOTOR HOUSING, DIAL RING, and DOOR KNOBS—a few of many items which can be spray-bake finished.

Here's How: Speedy production—Over 200 pieces per minute. Small space required—as little as 6′ x 18′. Quick change adjustments—only 10 minutes! Machine cost recovered in few months by actual case histories. Absolutely uniform quality controls.

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7601 PROSPECT AVENUE CLEVELAND, OHIO

simple schematic diagram to illustrate its operating principles. One of its principal features is a list of possible sources of coil scale build-up which enables steam cleaner users to circumvent these troubles.

Other useful features are general information on the use of steam cleaners for most efficient operation and a list of Do's and Dont's to obtain greatest efficiency and economy and to maintain equipment in top operating condition. Finally, compound recommendations for various types of cleaning jobs are given.

Outside Maintenance Paint Bulletin

Bitucote Products, a division of Bridges Paving Co., 1411 Central Industrial Drive, St. Louis 10, Mo., has made available an attractive, 2-color, bulletin on the characteristics, uses and actual applications of Bitucote Protective Coating—a general purpose emulsified asphalt used for protecting a great variety of structures.

This new bulletin illustrates eight actual uses of Bitucote Protective Coating where its resistance to acids, fumes, alkalies, salt spray, brine drip, actinic rays of the sun and the elements was a prime consideration.

Vapor Degreaser Manual

What vapor degreasing is, why it is used, what it accomplishes, its various merits for cleaning metal parts and products in preparation for painting or plating, basic degreaser designs, modern degreasers, installation and operation instructions, solvents and solvent recovery —these are a few highlights of the contents of a new Vapor Degreaser Manual recently published by Optimus Equipment Co., Matawan, N.J.

This illustrated book contains 28 pages (each slightly less than 6x9-in.) and is bound in an attractive gray cover printed in royal blue. It's free to those who write their requests on their firm's business stationery.

New Bulletins on Modern Appliances Finishes

American Cyanamid Co. announces the first seven of a new series of technical bulletins devoted exclusively to data on suggested formulations for various types of surface coatings. There are separate bulletins for each of the following: low-bake furniture finishes, baking undercoats, washing machine enamels, refriger-

ator enamels, heat-resistant enamels, white appliance enamels, and metal furniture enamels.

Based on extensive research and evaluation in the Company's Stamford, Connecticut Laboratories, each bulletin contains a suggested formulation, an analysis of the finish when so formulated, recommended application procedures, and data on film properties.

Copies of any or all of these seven bulletins may be obtained from American Cyanamid Co., Coating Resins Dept., 30 Rockefeller Plaza, New York 20, N.Y.

Puts Out Fire Quickly

A new chemical fire extinguisher setup automatically sounds loud warning when fire hits, stops motors, closes windows, shuts off fans, closes doors, and puts out fire. The diagram shows a typical installation with all these controls. It is for gasoline, oil, paint, varnish, and electrical fires. Also, it stops Class A fires in closed storage vaults.

An illustrated news story on the new Alfco Carbon Dioxide System can be obtained free by writing to American-La-France-Foamite Corp., Elmira, N.Y.

Protective Coatings Technical Bulletin

A paper "Physical Chemical Research in the Protective Coating Industry" presented by Dr. Roy H. Kienle, Director of Application Research, American Cyanamid Co., Calco Chemical Division (Bound Brook, N.J.) has been reprinted as Calco Technical Bulletin No. 901.

Dr Kienle was selected to give the first of the Mattiello Lectures, established to honor Dr. Joseph J. Mattiello, scientist and teacher in the field of protective coatings, before the Federation of Paint & Varnish Production Clubs at Atlantic City, N.J., in November, 1949.

Form Fitted Masks for Finishing

High production methods as applied to decorative finishing of plastics, metal stampings and die castings is the subject of a 6-page, 7-color folder now being offered to the trade by Thierica Studio, 409 Henry Ave., S. E., Grand Rapids, Mich.

The folder also contains full information for adapting this finishing method to various products, as well as a complete description of the five types of fitted masks that are commonly employed.

Details for ordering or for making further investigation of the process are included, together with suggestions to consider when approving designs that are intended for high production practice.

It is a factual folder intended for permanent reference and may be had without charge. Ask for folder No. SM-11.

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- There's no fuss, no bother, no mess with Polytone. Sprays easily.
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Industrial FINISHING Editorial

Finishing Wood and Metal Furniture

The finishing of wood furniture certainly has its peculiarities and problems. So has the finishing of metal furniture. The two sets of peculiarities and problems are totally different.

Manufacturers of wood furniture who contemplate producing pieces in which both wood and metal are used will do well to educate themselves and their employees on metal finishing, and especially on surface cleaning and preparation to prevent rust. Even though the metal parts are purchased with finish applied, the manufacturer should become well acquainted with metal finishing requirements in order to specify and obtain a good and durable finish. Otherwise he may run headon into a lot of serious complaints and a damaged reputation.

What's New Now Takes Over

Modern methods should not be condemned simply because they may seem entirely different from those to which we have become accustomed over the years. In the past two decades many changes and improvements have developed in finishing methods and equipment. New and improved materials have been made available. Modern force-dry and bake ovens with automatically controlled heat and humidity devices have shortened the finishing cycle.

Improved air filters, mechanically controlled make-up air systems and pressurized spray rooms all contribute their part to better finishes. Paint heaters are among the latest modern equipment. If these devices are installed and correctly operated, viscosity of the material is better controlled, less solvents have to be mixed with the material, and more solids are applied to the product with fewer strokes of the gun.

Anyone who fails to take advantage of improved methods, equipment and materials is just about in the same category as the man who depends on getting around today with a horse and buggy.

Color and Heat Reflection; Facts From Tests

It is perhaps a matter of common knowledge that light colors are cooler than dark colors. Because light colors reflect heat and light rays they are more comfortable (in a house or in clothing) than dark colors which absorb heat radiation. Yet, how much difference is there between white and black?

The following facts have been released by the Color Research Laboratory of the Sun Chemical Corporation and are based on data assembled by the U. S. Navy. In testing the effects of color on the heat absorption of shop helmets worn as a safety measure by enlisted and civilian personnel, a difference of 22° F. will be noted between black and white (or aluminum) helmets on a summer day when the temperature is about 100° F. Here are a few actual figures:

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outside temperature, 100° F.; temperature inside white or aluminum helmet, 108° F.; temperature inside black helmet, 130° F.; yellow helmet, 112° F.; aluminum under black helmet, 126° F.

The differences are significant enough to warrant consideration of white on storage tanks both to keep contents cool and to reduce costly evaporation. And how about automobile tops, tanks, baby carriages? The Colonial builder was wise indeed to paint his house white (to keep it cool in summer) and his barn red (to keep it warm in winter).—*Sun Chemical Corp.*

Solvents by Tank Trailers

Tennessee Eastman Corp., Kingsport, Tenn., announces that delivery of plasticizers and solvents can now be made from its plant in Kingsport, Tenn. by tank wagon. This service will affect users in nine states of the South and Middle West—Indiana, Ohio, West Virginia, Kentucky, Virginia, Tennessee, North Carolina, Georiga and South Carolina. Deliveries will be made in tank trailers divided into two 1000 gallon and three 500 gallon compartments.

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A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

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Slow Drying . . . . Its Causes and Remedies

★ Slow drying or non-uniform drying of paints can create a serious bottleneck in manufacturing plants, therefore it is essential that the finishing department be aware of some of the causes and remedies of this condition.

A common cause of poor drying is a greasy, waxy or otherwise unclean surface. Before it is given a coat of sealer, primer, lacquer or enamel, every metal surface should be carefully cleaned by approved materials and methods.

Improper stirring or mixing of the paint, so the pigment isn't uniformly dispersed throughout the vehicle may also retard drying. It is wise to remember that the proper balance of ingredients, as formulated by the paint chemist is required for best results. Proper balance can only be obtained if the paint is thoroughly mixed before being used.

While the paint researcher has, to a great extent, taken care of drier obsorption on aging of the material, there are still instances when this phenomenon occurs. If you have made certain that the surface is clean, that your paint is thoroughly stirred (but not filled with air bubbles), and that all other conditions are normal, poor drying may be due to drier absorption. Additional drier should be added to compensate for this loss. Check with your supplier for the amount and type of drier required.

Aside from the causes mentioned, slow drying may result from poor

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

ventilation, humid weather and low temperatures in cold weather. Adequate ventilation is desirable, both from a performance as well as from a health viewpoint. Heat and circulation of air will overcome the effects of high humidity and cold weather. For proper drying, do not allow the temperature to go below 65°F.; in fact, a temperature of 70° to 75° F. is preferable for air-drying paint, varnish, lacquer and enamel coatings.—*Louis E. Martin.*

Promotions of Key Personnel by Atlas Powder Co.

Appointment of C. W. Craig and C. E. Ericson as manager and comptroller, respectively, of the North Chicago (Ill.) branch of the Atlas Powder Company's Industrial Finishes Department is announced by G. B. Work, departmental general manager.

C. W. Craig

Casper Apeland, formerly branch manager, has been named special representative for market research for both the North Chicago and Stamford, Conn., plants. Mr. Apeland was one of the founders in 1919 of the Brevolite Lacquer Co. at North Chicago, later acquired by Atlas Powder Co.

A graduate of Hiram College, Hiram, Ohio, Mr. Craig has been with Atlas for ten years, the past three as assistant manager at North Chicago. Mr. Ericson graduated from Lake Forest College and has been with Atlas since 1933. He has been office and credit manager.

Cellulose Acetate Molding Powder; Free Book

A new technical booklet, which describes the properties and applications of Hercules Powder Co.'s cellulose acetate molding powders, is now available from Hercules at Wilmington, Dela.

Among the four molding power formulations discussed, each of which is available in several flow types, one self-extinguishing type is especially suitable for use in applications which must pass tests by Underwriters' Laboratories, Inc.

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1689 Lee Road Cleveland 18, Ohio

Hercules Appointments

Three new posts for members of the administrative sales personnel of Hercules Powder Company's Synthetics Department were announced recently by Dr. W. M. Billing, general manager.

The new appointments are:

Henry Thouron, director of sales.

B. H. Little, district sales manager of the department's Boston branch office.

Howard C. Bates, special sales representative in New England.

Mr. Thouron was assistant director of sales for the Synthetics Department from 1946 to 1949, and for the past year has been on special assignment at The Hague, Holland.

Right above:
Henry Thouron

Left below:
Howard C. Bates

Below at right:
B. H. Little

He joined Hercules in 1934 as a member of the Naval Stores Department and later was technical representative for that department in New England. His career with Hercules was interrupted in 1940 when he enlisted in the Army. He was discharged in 1945 with the rank of lieutenant colonel.

Mr. Little joined Hercules in 1928 as a chemist. He has been with the Synthetics Department sales staff since 1939, shortly after organization of the department, and has played a prominent role in the development of the sales of the department's products. These products include synthetic resins for paint, varnish, and lacquer, adhesives, textiles, inks, and plastics.

Mr. Bates has represented the Synthetics Department in New England since joining the company in 1941. Recently

A Quick, Smooth, Uniform coating—assured by
BARRETT GALVANIZING AND HOT TINNING CENTRIFUGALS

BARRETT CENTRIFUGAL GALVANIZER is driven with high torque head and has an equalized disc brake for quick stop.

With the Barrett Whizo Galvanizer, excess metal is quickly removed from small parts after dipping in molten metal, in fact, much faster and more uniform production is assured. Parts will also pass the most rigid inspection for quality.

The method of handling is simple and easy. Work to be coated is placed in a round basket and submerged in molten metal. When thoroughly heated, the basket is placed in the Barrett Centrifugal to be immediately accelerated to high speed, the excess metal being thrown off before it can cool.

A quick pick up and stop (from 2 to 3 seconds each) assures maximum production with an even thickness of coating.

Machines furnished with or without heated surrounding drum, in capacities from 40 to 240 loads per hour, handling from 5 to 100 lb. loads. When used for tinning threaded work, rethreading has been found to be unnecessary.

Barrett Centrifugals are used extensively, combine speed with convenience of operation and the utmost in safety. They are highly developed to meet all reasonable requirements, have self-contained motor drive and occupy a minimum of floor space.

Send at once for full details of Barrett Centrifugal Galvanizer

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS.

he has been advised by his physicians to curtail his activities. In order to comply with these wishes and also to retain the benefit of his valuable experience, the new post of special representative was created. In his new post Mr. Bates will be able to concentrate on a more specialized field than previously was possible.

Porcelain Enamel Program

The Porcelain Enamel Institute has announced a general program for the PEI Twelfth Annual Forum to be held September 13-15 at the University of Illinois, Urbana. The Institute's Annual Forum is wholly concerned with porcelain enameling shop practices, processing, and technology, and Forum attendance is open to everyone interested in these phases of the industry.

Further information about the Twelfth Annual Forum may be obtained from the Porcelain Enamel Institute, 1010 Vermont Ave., N.W., Washington 5, D.C.

Enclosed Explosion-Proof Motors

Users of d-c motors, from ¾ to 1000-hp., are offered a new, fully illustrated 12-page bulletin just published by the Reliance Electric and Engineering Co., 1088 Ivanhoe Road, Cleveland 10, Ohio. Design, construction, selection, and ordering information are featured in the booklet.

Available in drip-proof, splash-proof, totally-enclosed, explosion-proof, blower-ventilated and gearmotor construction, these motors are designed to meet the rugged service conditions found throughout all production industries. Special attention is given in the booklet to the mechanical features and electrical characteristics which enable these motors to satisfy exacting drive requirements.

Trumbull Electric Sells Oven Business to Jensen

The Trumbull Electric Manufacturing Company of Plainville, Connecticut, has announced the sale of its Raymersion Oven business to Jensen Specialties, Inc., of Detroit, Michigan. Raymersion was the trade name given to Trumbull's infrared oven heating process.

In the terms of the sale, the Jensen organization, which should be contacted for new installations, has accepted the responsibility of servicing all existing installations previously manufactured and sold by Trumbull.

Mr. Paul H. Goodell, who was previously associated with Trumbull as Manager of Raymersion Oven sales, is now employed by Jensen Specialties.

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FOUNDATION FOR FINE FINISH

1. Dries with lacquer speed.
2. Has double lacquer solids at spray gun.
3. Fills very well—sands easily.
4. Adheres tenaciously to steel, wood, presdwood, aluminum, galvanized metal, etc.
5. Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.
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7. Available in GREY, SALMON and OFF-WHITE.
8. Ground well to smooth texture.

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Summer Finishing Problems

★ With the advent of hot, humid weather, finishers everywhere are likely to encounter more than their usual number of finishing headaches. Users of lacquer materials will have blushing troubles, accentuated orange-peel, dry spray and poorer hold-out. The addition of 2% to 5% of well balanced retarder will usually eliminate these difficulties. An alert finishing foreman will anticipate summer troubles by beginning to add retarder to his lacquers as soon as hot, humid weather sets in.

In the spraying of synthetic finishes, dry spray and sags may make the finisher's job less comfortable than ever. Paint manufacturers can make simple solvent adjustments which will make enamels handle the same at the spray gun in summer as they do during the cooler months.

Anticipation of these difficulties before they occur and solution of the problems involved by consulting with your suppliers' paint chemists—this timely thinking and action will make life more pleasurable for all concerned when the thermometer is reaching for the 100° F. mark—with humidity up in the 80's or 90's.—*M.A.*

★ *Guest editorial.*

New Director of Production at Du Pont Finishes Division

Alfred K. Burke, director of production of the Finishes Division of the Du Pont Company, retired July 1, after more than 35 years with the company.

Simultaneously, Lyman H. Priday, assistant director of production, became director of production, and Dr. Harold E. Goldsmith, formerly regional sales manager at Boston, became assistant director of production.

The Finishes Division operates eight plants, which make a variety of paints, varnishes, enamels, lacquers, adhesives, and related products.

Black Mfg. Co. Adds Two Sales Representatives

The Black Mfg. Co., Parkton, Md., makers of the Black Arrow Line of paint spray equipment, announces the addition of two men to its force of direct factory representatives.

Warren T. Biscoe, formerly of Lancaster Auto Supply, Philadelphia, is now covering Eastern Pennsylvania, with headquarters at 4417 Westminster Ave., Philadelphia 4.

H. H. Bantz has returned to the company and is now covering all of Michigan and Northern Indiana, with Detroit headquarters at 10853 Marne St.

DeVilbiss Co. Appointments

In its aim to improve constantly on its service to customers, the DeVilbiss Company, Toledo, Ohio, announces two recent changes in personnel.

Named as Technical Service Manager in the paint spray division is Lewis W. Lammiman, a veteran of 25 years with the company. During most of those years he has traveled in the United States and Canada, cooperating with customers on finishing and production problems and new methods of application. He has also been a regular contributor to trade publications and has talked before many trade and technical groups in all parts of the country.

To concentrate other activities in all divisions of the company which come under customer service, the company has set up the position of Equipment Service Manager and has appointed John W. Cochrun, formerly with Bendix-Westinghouse Automotive Air Brake Co. He is a Purdue graduate with many years of experience in service training and administration. Even during 4½ years of military duty he was in training activities with the airborne command and field artillery automotive school staffs.

The present line of DeVilbiss products includes spray finishing equipment, air compressors, exhaust systems and hose as well as medicinal and perfume atomizers.

L. W. Lammiman and John W. Cochrun

"Wood Graining"

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American Graining Plates are photographic reproductions of fine woods.

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Graining Plate Division

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RESTORE PAINT IN 2 MINUTES

PER GALLON WITH

MIRACLE BLUE - BOY

5 GALLON

PAINT REJUVENATOR

Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.

Originators of paint rejuvenating equipment---sixteen years—thousands of satisfied users.

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WANTED!

5,000 WOOD FINISHERS

to try the improved DETROIT HANDY "TAC" RAG on all surfaces before applying varnish, lacquer or synthetic enamel. They're non-inflammable at no extra cost, ready for instant use, never dry out or harden. *Standard* of your Finishing Industry for 16 years. Ask your supplier today or send for sample.

DETROIT HANDY "TAC" RAG

DETRO MFG. & SALES CO., INC., CULVER CITY, CALIF.

SENSATIONAL

- That's what customers say about ALLIED'S new non-inflammable ELECTRO COLD STRIPPER.
- Removes paints, enamels, synthetics and wrinkles almost instantly. You can see the finish literally "pop off". Only one operation required. Refinish immediately.
- Non-injurious to hands or metal.

Write for sample and quotations, or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.

2641 W. Grand Ave., Chicago 12.

Random Comment on the Industrial Scene

(Continued from page 8)

absorbing undercarriage. The manufacturer says it will carry larger pay loads and travel at passenger car speeds. Its principal advantage is to eliminate damage to freight. Freight damage claims paid by railroads last year amounted to more than 113 million dollars.

These cars will be available to railroads under the rental plan devised by the Equitable Life Assurance Society.

* * *

New Developments. The American Society of Tool Engineers, meeting in convention in Philadelphia, was told that five basic industries are using new isotopes from the United States Atomic Energy Commission in continuous gauges on standard low cost inspection operations. These comprise paper, leather, textile and metal.

At this same interesting convention more than 1500 new devices and tools were shown. One large company exhibited 17 items such as, marking devices, bolt heading dies, embossing stamps, monogram dies, end mills, name plates, food chopper knives and cold pulverizer blades.

Many lines of equipment have been entirely designed for the first time since the war.

One firm showed complete equipment for spray painting with super heated steam instead of compressed air.

* * *

Non-Corrosion Steel. Development of 12% chromium alloy steel castings for use in gas-condensate wells in many parts of the world is helping to solve a multi-million dollar corrosion problem for the oil and gas industry.

Perfection of the corrosion-resistant cast steel alloy now being used in

the production of valve bodies, fittings and similar parts required to withstand the terrific service pressures and corrosion factors involved is the outgrowth of intensive cooperative research extending over a period of more than seven years. Adoption of the 12% chromium alloy, he added, has meant literal savings of millions of dollars in equipment life, operating safety and minimization of costly service failures in the field.

A Safety Campaign in Employee's Pocket

ACCIDENTS and fires are a double-barrelled threat to the peace of mind of management. The safety of employees is a highly human responsibility which cannot be ignored; protection of property from damage by fire is a duty to the investors who own it.

Because of these obligations the modern plant is out of pocket a great deal of money for safety advice, protective devices and fire-fighting equipment. Then, to minimize the injuries that the safety engineer's blueprints say are impossible, the large plant hires a medical staff to man a first-aid room.

It is largely human carelessness that causes accidents and fires, especially where they occur despite every possible precaution. The problem, then, is to keep alive the awareness of inherent danger everywhere, even in such simple functions as walking down stairs. To this end management uses bulletin boards, precautionary signs, safety handbooks, house organs, lectures and public address system warnings. Many companies offer rewards for employee groups with good safety records. Prizes for practical suggestions for cutting accident rates are routine in many places.

In recent years a great many plants

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Paint Testing Apparatus
GARDNER LABORATORY
Bethesda 14, Md.

PEARL ESSENCE
"Astralucine Brand"
Produces a high luster
on a variety of finishes
Write for your free copy of our informative Technical Bulletin
"Pearl Essence Finishes"
—what they are and how to use them.
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one of many reasons for the
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Individually engineered in stationary, conveyorized, portable or special designs
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FOR ALL FINE FINISHES
TAC-ALL TACK RAGS
Packed bulk or individually.
Prices and samples on request.
GEO. W. RENNER CO.
2309 Lillie St., Ft. Wayne 5, Ind.

PINHOLING PROBLEMS on wood panels?
Many concerns use "Liquafill Sizing"
For information, write
THE LIQUAFILL MFG. CO.
823 Richard St. Dayton 3, Ohio

have found that there is another educational weapon that is both economical and effective—the book match.

Book matches are carried by close to 100% of smokers each of whom have the opportunity to see the message every time they light up with one of the 20 matches in the book; and, about half of them can remember the message without referring to the matches. Furthermore, the matches are carried into the home where their possessor—and the members of his family—have further exposures to the safety advertising.—*W. M. Howard.*

Alcohol Resistance of Wood Finishes

By Rollin H. Wampler

THE ALCOHOL resistance of a wood finish is important, not only because of the widespread use of alcoholic beverages but because of the alcohol content of perfumes and other cosmetics, and in many other materials likely to come into contact with the finish.

Some manufacturers of wood finishing materials have done a lot of research to develop materials that are highly resistant to alcohol. The thermo-setting wood finishes based on amine and alcohol-stage catalyzed phenolics give the best resistance of all. These finishes can be forced dried, and some are available that will air-dry satisfactorily and still ultimately develop the full resistance conferred by baking.

A few special alcohol-resistant lacquers are on the market that are based either on thermo-setting materials or other materials carefully selected for alcohol resistance. It should be remembered that force drying brings out the full resistance sooner than air drying. However, most such air dried materials will develop their full resistance in a few weeks, so that by the time the furniture is in service the finish has attained its full resistance.

These special alcohol-resistant materials also show outstanding resist-

ance to many solvents, such as those in finger nail lacquers and finger nail lacquer removers. Resistance to heat, printing, and to most foods is of a high order in these special materials. In fact, they are so good it is difficult to remove these finishes with paint removers, therefore the manufacturer may have difficulty in patching or repairing them.

Classified Advertising

Rate: $1.00 per line per insertion—minimum $5.00

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Finishing Supervisor wants position as finisher-supervisor for good, reliable furniture or radio plant. 24 years' supervision experience on and off conveyor. Two years of radio and TV cabinets. Will go anywhere. Address IF-743, care Industrial Finishing.

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Thoroughly experienced in quality radio and television production. Complete charge of 75-man operation, using console conveyors and ovens. Wonderful opportunity for right man. Factory located in New England. Give full information in your first letter. Address IF-744, care Industrial Finishing.

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Industrial finishing foreman for small but modern paint shop in the South. Must have thorough knowledge of baking enamel mixing and application on metal. Give complete experience record, references and salary expected in first letter. Excellent opportunity for right man. Address IF-745, care Industrial Finishing.

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Experienced Paint Spray Equipment salesman. Good salary plus commission. Address IF-712, care Industrial Finishing.

Sprays on in minutes with your regular spray equipment. Dries quickly to form non-combustible, self-supporting film. Peels off as easily as peeling a banana — no matter how thick the accumulated spray dust. Eliminates paper, grease, hand-scraping, fire-hazard. Now used in hundreds of large and small plants because *it saves time and money*

ORDER TEST-SAMPLE *NOW*

5 gallons shipped prepaid on a money-back guarantee $13.75

Attractive low price on quantity re-orders.

BETTER FINISHES AND COATINGS, INC.

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127 E. 7th ST., LOS ANGELES 14, CAL.
IN CANADA: HUGH RUSSEL & SONS, LTD.
MONTREAL AND TORONTO

SANDING ROOM FOREMAN.

Able leader for medium sized department. Excellent Opportunity, top salary. Write full qualifications, age, etc., immediately to J. L. METZ FURNITURE CO., Inc., Hammond, Indiana.

SALESMAN WANTED.

Industrial Finishes. Experienced. Wanted by Los Angeles plant of national company. Write, giving full background. Address IF-750, care Industrial Finishing.

INDUSTRIAL FINISHES SALESMEN WANTED.

Large manufacturer of all types of industrial finishes with a new plant in the midwest has attractive sales positions open for qualified men with a following in Detroit, Cleveland, Chicago and the surrounding areas. Please apply in writing giving full details. Replies confidential. Our men know of this ad. Address IF-746, care Industrial Finishing.

SALES REPRESENTATIVE WANTED

For Maine, Vermont and New Hampshire to handle complete line of industrial finishes for reputable New England manufacturer. Prefer a man now handling related materials for wood and metal accounts. Commission basis. Replies in strictest confidence. Address IF-747, care Industrial Finishing.

SALESMEN WANTED.

Have some territory available for Industrial Finishing salesmen in middlewest and southern states. If you have a following and would like to work with aggressive manufacturer paying above average commissions, selling thinners, sealers, lacquers, stains, enamels, please communicate with us. STANDARD INDUSTRIAL PRODUCTS, INC., Evansville 4, Ind.

EXPERIENCED LACQUER CHEMIST WANTED

Must have knowledge of formulation of lacquers, stains and fillers. State education, experience and salary expected. INDIA PAINT & LACQUER COMPANY, 5894 South Central, Los Angeles 21, California.

WANTED TO BUY.

Will Buy your dirty Thinners and Solvents. Send sample or letter giving approximate contents and solids. Address THE JOHANN CO., Room 416, 1180 E. 63rd St., Chicago, Ill.

PRIMER FOR SALE.

Red Oxide—Sherwin-Williams and Du Pont—Bake or Air Dry—Best Quality—$1.10 per gal. drums, $1.25 in 5's. Check with order please. HOGAN PAINT & CHEMICAL CORP., Edgemere, L.I., N.Y.

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Your Formulae or Ours

Established manufacturer of quality paints, lacquers, thinners, synthetics and industrial finishes will make up special finishes to order. Money saving plan for quantity buyers. Complete laboratory and production facilities. Address IF-742, care Industrial Finishing.

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The period May 15-July 4 marks an important campaign to strengthen the financial independence of the nation's people. You and other leaders of industry will be the principal deciders of the success of this campaign. It's the Treasury Department's *Independence Drive* to increase purchases of United States Savings Bonds. And the Payroll Savings Plan, now operated by 21,000 companies, is responsible for the greatest share of Series E Bond sales.

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The Treasury Department acknowledges with appreciation the publication of this message by

INDUSTRIAL FINISHING

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

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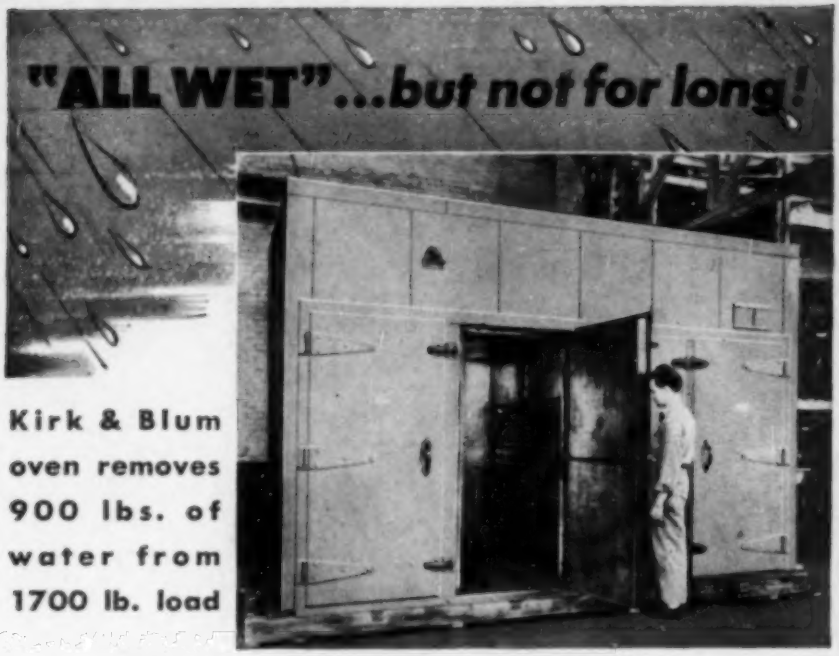

Kirk & Blum oven removes 900 lbs. of water from 1700 lb. load

... at Tennessee Eastman Corporation, Kingsport, Tenn.

Special design insures removal of moisture as it is taken up by the warm air, preventing redeposit on other trays.

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This 4-compartment dehydrating oven is another example of the wide diversification of drying problems solved by KIRK & BLUM Engineers.

The oven was shipped from the KIRK & BLUM plant completely assembled, thoroughly tested and ready to operate exactly as shown.

If you have an oven problem, discuss it with a KIRK & BLUM Engineer. There's no obligation. Write for free booklet, "Industrial Ovens."

KIRK AND BLUM

INDUSTRIAL OVENS

The Kirk & Blum Mfg. Co.
2831 Spring Grove Ave.,
Cincinnati 25, Ohio